Carrier®

Carrier Corporation

U.S.A. EXPORT PRODUCTS

Preface

Customer Satisfaction—the driver of success

The goal of Carrier North American Operations (NAO) is to be the best in the industry at serving our customers. Our Customer-Driven Strategies center on continuous improvement in three critical areas:

- Providing superior product quality
- Exceeding customer expectations during every transaction
- Achieving differentiation through constant innovation

By enthusiastically embracing these strategies, we will enter the next century as the undisputed leader of our industry.

Protecting the Environment—more than just refrigerants

The HVAC industry is in the midst of major changes. Pressing environmental issues such as global warming, ozone depletion, and indoor air quality, along with increased activity by utility companies, building owners and multi-national accounts, are affecting the way we will do business for years to come.

To meet these challenges requires the resources and R&D that only the world's leader in comfort cooling can provide. Carrier is the only organization to have developed such a wide variety of environmentally friendly solutions designed to keep you cool.

World Class Quality

World class product quality doesn't just happen, it is the result of dedication, teamwork, and quality systems. The quality systems of all our plants have been registered by Underwriters Laboratories (UL) and the British Standards Institute (BSI) to the ISO-9000 series standards. These registration marks are credible evidence of our commitment to our customers, all over the world.

Quality Assurance

Approvals:
IEN 29002
BS5750 PART 2
ANSI/ASQC Q92

McMinnville, TN (#A2260) ISO 9002
Collierville, TN (#A2934) ISO 9001
Tyler, TX (#A2325) ISO 9001, 9002

Quality Assurance

Indianapolis, ID (#A2883) ISO 9001

Quality Assurance

Approvals:
EN ISO 9001
BS EN 9001
ANSI/ASQC Q9001

Syracuse, NY (#A1028) ISO 9001

Carrier—your worldwide air conditioning source

The products described in this catalog are produced in the manufacturing plants of Carrier's North American Operations unit and represent the basis for the U.S. product offering.

In addition to these products, Carrier offers a wide array of air conditioning and refrigeration products and systems from Carrier plants located throughout the world.

Carrier People—creating solutions

Carrier offices around the world reach out to serve our customers in 130 countries. Staffed by engineers, they will guide and advise on system design, application and product selection—to best match your individual project requirements.

Your local Carrier office is there to discuss your air conditioning needs, however big or small. Contact them for further information on these and other Carrier products.

All of the product information in this catalog is supplemented by product data catalogs with selection and physical data information.

Working for a better world—inside and out

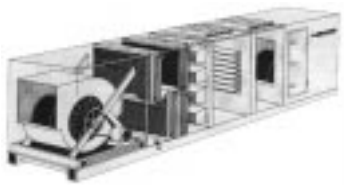
- Barrier and containment products to conserve your increasingly valuable CFC-11.

- Advanced technology centrifugal and screw chillers designed to use HCFC-22 today, and leading HFCs tomorrow.

- Integrated systems featuring the Carrier Comfort Network or any of the wide variety of zoning systems for unparalleled flexibility and single source responsibility.

Carrier® COMFORT NETWORK® COMPATIBLE

- Flexible air-systems comprised of air-handlers, OptiFlow fan powered terminals, and Moduline diffusers for unprecedented comfort and floor plan flexibility.



- Industry-leading packaged rooftop units—the highest efficiencies and lowest sound—which reduce indirect global warming potential and reduce noise pollution.

- Smaller and quieter products for reduced shipping costs, quieter operation, and greater onsite flexibility.

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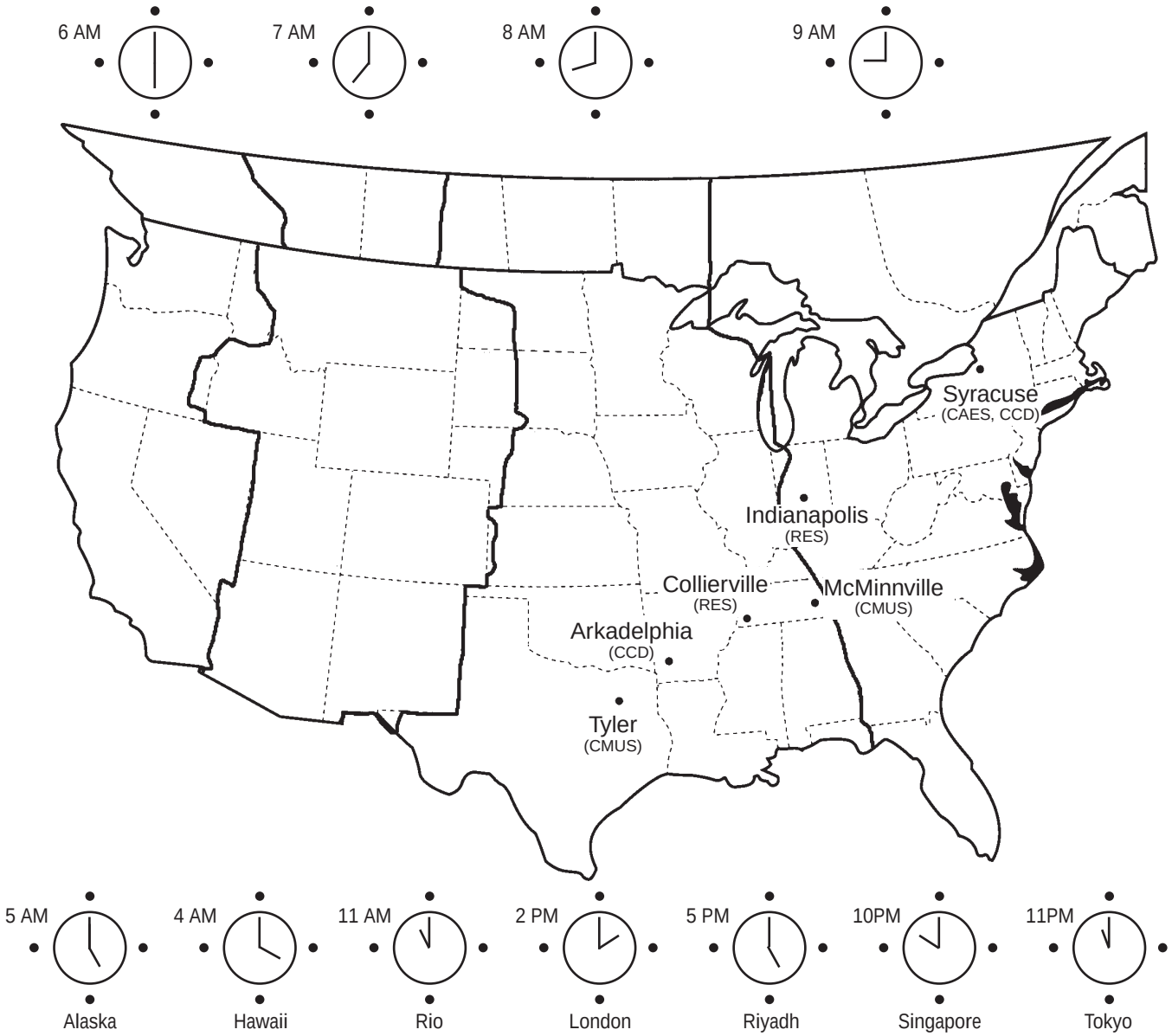
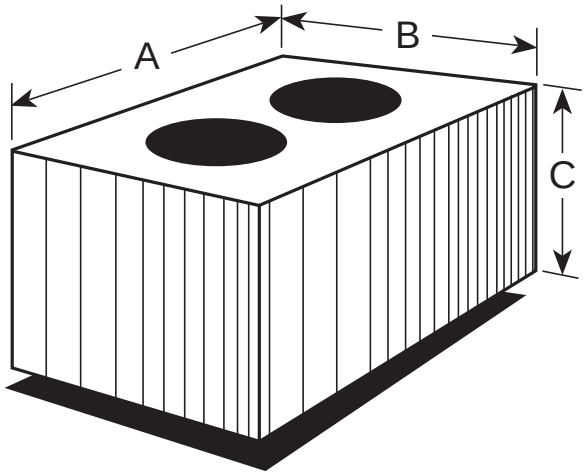


CAES – Commercial Applied Equipment
CMUS – Commercial Unitary Systems Products
RES – Residential Products
CCD – Carlyle Compressor Division



Carrier product specifications

Nominal capacities as listed are based on standard conditions. Ratings are expressed in SI metric notation for 50 Hz equipment and in English measurement for 60 Hz units.

Dimensions are always in terms of largest measurement for length, width, and height when looking from the front of the unit. (Inch dimensions are approximate, as all dimensions have been rounded upward to the next integer.)

For more detailed information about all Carrier products, contact your local Carrier representative.

SMALL TONNAGE DX SPLIT SYSTEMS

ELECTRIC HEAT/ELECTRIC COOLING

COMPRESSOR BEARING UNITS

COOLING ONLY

38TDA,TRA,BR,TUA,CM, TKB,CKC, - 1.5 to 5 Ton

HEAT PUMP

38YDA,YRA,YS,BY,YMA, AY,YKC,YCC - 1.2 to 5 Ton

AIR HANDLERS/FAN COILS

COILS

CD5A,CD5B, CC5A,CG5A CD3A, CE3A, CF5A,CD3B

FAN COILS

FK4C,FC4B,FB4A, FA4A,FD3A,FF1C, FG3A,FH4A

ACCESSORIES

ELECTRONIC AND MECHANICAL AIR CLEANERS

31 Series 1200 to 2000 CFM

HUMIDIFIERS

49 Series

COMFORT VENTILATORS

VA3, VB5, VC5

ZONING SYSTEMS

Comfort Zone WeatherMaker Two-Zone

FORCED AIR HEATING/ELECTRIC COOLING

COMPRESSOR BEARING UNITS

COOLING ONLY

38TDA,TRA,BR,TUA,CM, TKB,CKC - 1.5 to 5 Ton

HEAT PUMP

38YDA,YRA,YS,BY,YMA, AY,YKC,YCC - 1.2 to 5 Ton

FURNACE/COILS

GAS-FIRED (NATURAL/LP) FURNACES

58MVP,MXA,MCA, TUA/TMA, WAV/ZAV, PAV/RAV,GFA, EFA 33,000 to 124,000 BTUH

OIL-FIRED FURNACES

58B Series 55,000 to 200,000 BTUH

BOILERS

BW/BS Series 37,500 to 299,000 BTUH

COILS

CD5A,CD5B,CC5A,CG5A CD3A,CE3A,CF5A,CD3B

ACCESSORIES

ELECTRONIC AND MECHANICAL AIR CLEANERS

31 Series 1200 to 2000 CFM

HUMIDIFIERS

49 Series

COMFORT VENTILATORS

VA3, VB5, VC5

ZONING SYSTEMS

Comfort Zone WeatherMaker Two-Zone

DUCT FREE SPLIT SYSTEMS

COMPRESSOR BEARING UNITS

COOLING ONLY

38HD - C 1.5 to 5 Ton

HEAT PUMP

38QR - C .75 to 4 Ton

MULTI SPLIT

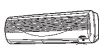
38HDS

GLOBAL COND. UNIT

38AN, BK .75 to 1 Ton

DUCT FREE FAN COILS

HI-WALL



40QNB - Cooling Only 40QNE - Heat Pump .75 to 2 Ton

CEILING MOUNTED SUSPENDED

40QAB - Cooling Only 40QAE - Heat Pump 1.5 to 5 Ton

IN-CEILING MOUNTED CASSETTE

40QKB - Cooling Only 40QKE - Heat Pump 1.5 to 3 Ton

PACKAGED ROOFTOP — CONSTANT VOLUME

PACKAGED ROOFTOPS

GAS HEATING — ELECTRIC COOLING

48SS -018-060
1.5 to 5 Ton - Convertible

48TJ - 004-014
3 to 12.5 Ton - Convertible

48HJ - 004-014
3 to 12.5 Ton - Convertible

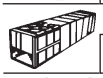
48GJ - 006-012
5, 7.5 & 10 Ton - Convertible

48HJ 015, 017, 025
15 to 25 Ton - Downshot

48TJ - 016-040
15 to 25 Ton - Downshot

48MA - 016-040
15 to 37 Ton - Downshot

48EJ - 20 to 45 Ton Downshot
48EW - 20 to 45 Ton - Horizontal


48DJD, DJE, NP - 034-074
30 to 75 Ton - Downshot

ELECTRIC HEATING — ELECTRIC COOLING

50HS,SS - 018-060
1.5 to 5 Ton - Horizontal

50ZH, ZP - 024-060
2 to 5 Ton

50TJ - 004-014
3 to12.5 Ton - Convertible

50HJ - 004-014
3 to 12.5 Ton - Convertible

50HJ - 015, 017, 025
13 to 20 Ton - Downshot

50GJ - 006-012
5, 7.5, & 10 Ton - Convertible

50TJ - 016-028
15 to 25 Ton - Downshot

50ME - 016-040
15 to 37 Ton - Downshot

50EJ, - 20 to 45 Ton - Downshot
50EW, - 20 to 45 Ton - Horiz.

50DW - 30 to 75 Ton - Horiz.
50DJ - 30 to 75 Ton - Downshot

HEAT PUMP

50HJQ - 004-012
3 to10 Ton - Convertible

50TJQ - 004-012
3 to10 Ton - Convertible

50HJQ - 014-016 - Downshot

50EJQ - 024-028
20 to 25 Ton - Downshot
50EWQ - 024-028
20 to 25 Ton - Horizontal

DIFFUSERS

35BD Linear Slot
100 to 400 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

PACKAGED ROOFTOP — VARIABLE AIR VOLUME

PACKAGED ROOFTOPS

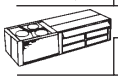
GAS HEATING/ELECTRIC COOLING

48EK - 20 to 45 Ton Downshot
48EY - 20 to 45 Ton - Horizontal

48DK
30 to 75 Ton - Downshot

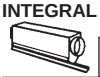
ELECTRIC COOLING — ELECTRIC HEATING

50EJ, EK - 20-45 Ton Downshot
50EW, EY - 20-45 Ton Horizontal


50DJ,NP - 30 to 75 Ton - Downshot
50DW,NB - 30 to 75 Ton - Downshot

AIR TERMINALS

INTEGRAL DIFFUSER VAV TERMINALS


37H Moduline - 100 to 400 CFM

SINGLE DUCT VAV WITH REMOTE BOOT DIFFUSERS

35D,OptiFLOW Single Duct VAV Terminal - 200 to 4500 CFM

35BD Boot Diffusers
100 to 400 CFM

FAN-POWERED TERMINALS WITH REMOTE 35BD BOOT DIFFUSERS

45S OptiFLOW Series Type
300 to 3000 CFM

45T OptiFLOW Parallel Type
75 to 4000 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

DX SPLIT SYSTEMS — CONSTANT VOLUME

COMPRESSOR BEARING UNITS

AIR-COOLED

38AK
6 to 10 Ton

38AKS
7.5 to 40 Ton

38JB
15 & 20 Ton

38AH
20 to 130 Ton

AIR-COOLED HEAT PUMP

38AQS
7.5 to 15 Ton

AIR HANDLERS

CENTRAL STATION

39L
1500 to 9,000 CFM

39T
3000 to 50,000 CFM

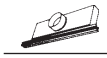
PACKAGED

40RM
2400 to 12,000 CFM

40RMS
3000 to 12,000 CFM

40RMQ
3000 to 6,000 CFM

BOOT DIFFUSERS


35BD Linear Slot
100 to 400 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

DX SPLIT SYSTEMS — VARIABLE AIR VOLUME

COMPRESSOR BEARING UNITS

AIR-COOLED

38AK
6 to 10 Ton

38AKS
7.5 to 40 Ton

38AH
20 to 130 Ton

WATER-COOLED

09AB,BB,DE,DK, BY
3 to 117 Ton

AIR HANDLERS

CENTRAL STATION

39L
1500 to 9,000 CFM

39T
3000 to 50,000 CFM

PACKAGED

40RM
2500 to 12,000 CFM

40RMS
3000 to 12,000 CFM

40RMQ
3000 to 6,000 CFM

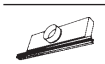
TERMINALS/FAN COILS

INTEGRAL DIFFUSER VAV TERMINALS

37H Moduline
100 to 400 CFM

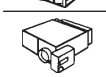
SINGLE DUCT VAV WITH REMOTE BOOT DIFFUSERS

35D OptiFLOW Single Duct VAV Terminal - 200 to 4500 CFM


35BD Linear Slot
100 to 400 CFM

FAN-POWERED TERMINALS WITH REMOTE 35BD BOOT DIFFUSERS

45S OptiFLOW Series Type
300 to 3000 CFM


45T OptiFLOW Parallel Type
75 to 4000 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Control

Carrier Standard Electronic Thermostats

INDOOR PACKAGED UNITS — CONSTANT VOLUME

SINGLE-PACKAGED UNITS

AIR-COOLED

50AH Roomtop
2 to 5 Ton

50BY, BD
7.5 to 20 Ton

WATER-COOLED

50BR
5 to 20 Ton

50BA
20 to 30 Ton

50BT
40 to 60 Ton

CONDENSERLESS

50BT
5 to 20 Ton

50BB
20 to 30 Ton

50BU
40 to 60 Ton

WATER SOURCE HEAT PUMP

50HQ Horizontal
.5 to 10 Ton
7400 to 124,000 Btuh

50VQ Vertical
.75 to 25 Ton
9800 to 296,000 Btuh

DIFFUSERS

35BD Linear Slot
100 to 400 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

INDOOR PACKAGED UNITS — VARIABLE AIR VOLUME

SINGLE-PACKAGED UNITS

ROOMTOP

50AH
2 to 5 Ton

WATER-COOLED

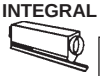
50BJ Vertical
15 to 60 Ton

CONDENSERLESS

50BK
15 to 60 Ton

TERMINALS/FAN COILS

INTEGRAL DIFFUSER VAV TERMINALS


37H Moduline - 100 to 400 CFM

SINGLE DUCT VAV WITH REMOTE BOOT DIFFUSERS

35D OptiFLOW Single-Duct VAV Terminal - 200 to 4000 CFM

35BD Linear Slot
100 to 400 CFM

FAN-POWERED TERMINALS WITH REMOTE 35BD BOOT DIFFUSERS

45S OptiFLOW Series Type
300 to 3000 CFM

45T OptiFLOW Parallel Type
75 to 4000 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

CHILLED WATER — CENTRAL STATION

CHILLERS

WATER-COOLED SCREW

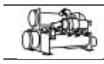
30HX
70 to 270 Ton

23XL
160 to 350 Ton

CENTRIFUGAL

19XL
300 to 500 Ton

19XR
350 to 800 Ton


17/19EX
600 to 2300 Ton

17DA
3000 - 7000 Ton

WATER-COOLED

30HW/HK/HX
15 to 270 Ton

ABSORPTION

16JB
100 to 800 Ton

16JT
100 to 1700 Ton

16DF
135 to 1000 Ton

AIR-COOLED

30GT Packaged
15 to 35 Ton

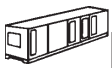
30GN Packaged
30GT Packaged
30GX Packaged
40 to 400 Ton

30HWA/HC/HXA & 090D/DE
15-250 Ton

AIR HANDLERS

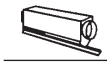
CENTRAL STATION

39L
1000 to 9000 CFM


39T
3000 to 50,000 CFM

TERMINALS/FAN COILS

INTEGRAL DIFFUSER VAV TERMINALS


37H Moduline
100 to 400 CFM

SINGLE DUCT VAV WITH REMOTE BOOT DIFFUSERS

35D OptiFLOW
Single Duct VAV
Terminal
200 to 4000 CFM

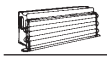
35BD Linear Slot
100 to 400 CFM

FAN-POWERED TERMINALS WITH REMOTE 35BD LINEAR SLOT DIFFUSERS

45S OptiFLOW
Series Type
300 to 3000 CFM

45T OptiFLOW
Parallel Type
75 to 4000 CFM

INDUCTION AIR TERMINALS


36R, S, TE
19.4 to 131 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

CHILLED WATER — ROOM FAN COIL

CHILLERS

WATER-COOLED SCREW

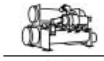
30HX
70 to 270 Ton

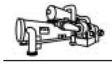
23XL
160 to 350 Ton

CENTRIFUGAL

19XL
300 to 500 Ton

19XR
350 to 800 Ton


17/19EX
600 to 2300 Ton


17DA
3000 - 7000 Ton

WATER-COOLED

30HW/HK
15 to 60 Ton

ABSORPTION

16JB
100 to 800 Ton

16JT
100 to 1700 Ton

16DF
135 to 1000 Ton

AIR-COOLED

30GT Packaged
15 to 35 Ton

30GN Packaged
30GT Packaged
40 to 400 Ton

30HWA/HL/HXA & 09DE/DK
15-250 Ton

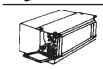
AIR-COOLED SCREW

30GX
80 to 175 Ton

ROOM FAN COILS

FAN COILS

42V Vertical Room
150 to 1200 CFM


42C Horizontal Room
200 to 1200 CFM

42D Ducted
600 to 2000 CFM

42BH System
800 to 4000 CFM

40RS
2200 to 14,800 CFM

CONTROLS

Carrier COMFORT NETWORK

Carrier DDC Controls

Carrier Standard Electronic Thermostats

Chiller Systems

30GT/GN

Air-Cooled Chiller

30GT/GN

15-400 tons (50-1414 kW), HCFC-22
27-285 tons (92-973 kW), HFC-134a

Features	Benefits
■ EXV – long stroke design.	Slug-resistant design achieves the industry's lowest standard operating ambient -18° C.
■ Industrial-grade compressor.	Operates up to 52° C under most conditions without unloading.
■ Multiple compressors, suction cutoff unloading.	Lowest overall kW/hr operating costs.
■ UL/CSA listing (60 Hz).	Quick installation – electrical inspection minimized.
■ No end-access required [>425 kW (120 tons)].	Minimizes space required for installation.
■ 723 kPa (300 psig) cooler waterside pressure rating.	Standard unit can be applied to high water-pressure applications.
■ Low condenser air velocity.	Quieter operation – up to 6 dBa (3 dBa is perceptible).
■ Carrier-patented, EXV position control of fans.	Reduces operating cost at outdoor temperatures below 21° C.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			ft		
30GT015	50	14	54	15	3247	1130	1413	10.7	3.7	4.6
30GT020	61	17	69	20	3247	1130	1413	10.7	3.7	4.6
30GT025	85	24	83	24	3247	1742	1413	10.7	5.7	4.6
30GT030	94	27	106	30	3247	1742	1413	10.7	5.7	4.6
30GT035	123	35	–	–	4424	1742	1413	14.5	5.7	4.6
30GT040	126	36	123	35	2523	2247	2012	8.3	7.4	6.6
30GT045	146	42	147	42	2523	2247	2012	8.3	7.4	6.6
30GT050	177	50	180	51	2523	2247	2012	8.3	7.4	6.6
30GT060	223	63	212	60	3125	2247	2218	10.3	7.4	7.3
30GT070	255	73	247	70	3125	2247	2218	10.3	7.4	7.3
30GT080	288	82	285	81	3410	2328	2428	11.2	7.6	8.0
30GT090	307	87	319	91	3410	2328	2428	11.2	7.6	8.0
30GT100	350	100	352	100	4277	2328	2428	14.0	7.6	8.0
30GT110	378	108	390	111	4277	2328	2428	14.0	7.6	8.0
30GT130	426	121	434	124	5943	2328	2428	19.5	7.6	8.0
30GT150	493	140	509	145	5943	2328	2428	19.5	7.6	8.0
30GT170	553	157	557	158	5943	2328	2428	19.5	7.6	8.0
30GT190	606	172	632	180	6851	2328	2428	22.5	7.6	8.0
30GT210	707	201	703	200	6851	2328	2428	22.5	7.6	8.0
30GT230	781	222	805	229	9372	2328	2428	30.8	7.6	8.0
30GT245	802	228	787	224	9372	2328	2428	30.8	7.6	8.0
30GT255	844	240	866	246	10240	2328	2428	33.6	7.6	8.0
30GT270	900	256	909	259	10240	2328	2428	33.6	7.6	8.0
30GT290	988	281	1022	291	11148	2328	2428	36.6	7.6	8.0
30GT315	1087	309	1097	312	11148	2328	2428	36.6	7.6	8.0
30GT330	1106	314	1113	317	11906	2328	2428	39.1	7.6	8.0
30GT360	1188	–	1188	–	12815	2328	2428	42.0	7.6	8.0
30GT360	–	395	–	338	13722	2328	2428	45.0	7.6	8.0
30GT390	1313	373	1335	380	13722	2328	2428	45.0	7.6	8.0
30GT420	1414	402	1407	400	13722	2328	2428	45.0	7.6	8.0

30GX

Air-Cooled Chiller

30GX Ecologic™ Chillers

80-175 tons (281-615 kW), HFC-134a

Features	Benefits
■ HFC refrigerant.	Non-ozone depleting—not subject to phaseout.
■ Factory-installed options.	Minimizes site work and field labor.
■ Screw compressor.	Lower vibration levels, high reliability.
■ Flooded cooler, 300 Psig (2086 kPa) rated.	High efficiency, mechanically cleanable, application flexibility.
■ Ecologic™ control.	Fully automatic—leaving and entering control suitable for variable flow. CCN compatible.
■ 2-line, 24-character display.	Easy maintenance, diagnostics and operation.
■ Reduced footprint.	Easy replacement, reduced transportation costs.
■ Aeroacoustic fan.	High efficiency, less annoying sound.
■ High EER.	Lower demand charges, lower kW/hr cost, lower first cost where utility rebates apply.
■ Long-stroke EXV/economizer.	Improved performance and part load efficiency.
■ Factory load test.	Assured startup.
■ ISO 9002.	Quality assurance.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
30GX	kW	tons	kg	lbs	mm			ft		
080	264	75	2864	6313	2879	2247	2180	9.5	7.4	7.2
090	292	83	2873	6333	2879	2247	2180	9.5	7.4	7.2
105	330	-	3087	6809	2879	2247	2180	9.5	7.4	7.2
106	334	95	3347	7379	3336	2247	2180	10.9	7.4	7.2
115	373	106	3352	7389	3336	2247	2180	10.9	7.4	7.2
125	405	115	3426	7554	3336	2247	2180	10.9	7.4	7.2
136	447	127	3954	8717	4250	2247	2180	13.9	7.4	7.2
150	495	-	3878	8550	4250	2247	2180	13.9	7.4	7.2
151	-	142	4136	9118	5867	2247	2180	19.3	7.4	7.2
160	530	-	4025	8873	4250	2247	2180	13.9	7.4	7.2
161	535	152	4285	9446	5867	2247	2180	19.3	7.4	7.2
175	580	-	4294	9466	5867	2247	2180	19.3	7.4	7.2
176	-	166	4561	10,056	6780	2247	2180	22.2	7.4	7.2

Chiller Systems

Water-Cooled/Condenserless Chillers

Models 30HK, HW

15-60 tons cooling

30HK

30HWB
Light Wonder

Features

- Narrow design.
- Semi-hermetic compressors.
- Electronic control.
- Suction cutoff unloading.
- Positive-pressure design utilizes HCFC-22.

Benefits

Reduces installation cost. Unit disassembly or wall removal unlikely.

Reduced service costs.

Simple, yet sophisticated leaving temperature control.

Low operating costs.

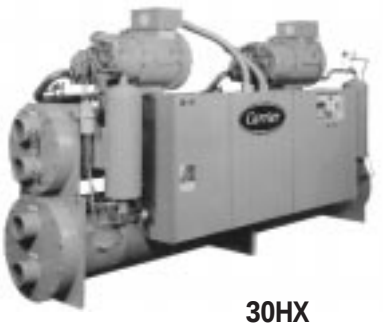
Ensures current and future adherence to environmental mandates.

Model	Nominal Capacity 50Hz kW	Nominal Capacity 60Hz tons	Machine Weight kg	Machine Weight lbs	Dimensions A mm	Dimensions B mm	Dimensions C mm	Dimensions A in	Dimensions B in	Dimensions C in
30HWC018	55	15	560	1231	635	1065	2190	25	42	86
30HWC025	70	20	618	1359	635	1065	2190	25	42	86
30HWC028	90	25	675	1484	635	1065	2190	25	42	86
30HWC035	100	30	685	1508	635	1065	2190	25	42	86
30HWC040	130	38	774	1702	635	1065	2190	25	42	86
30HK040	145	41	1286	2830	889	1499	2489	35	59	98
30HK050	175	50	1459	3210	889	1499	2616	35	59	103
30HK060	210	60	1518	3340	889	1499	2616	35	59	103
30HWB	52	15	361	795	902	1415	724	36	55	29
Light Wonder	69	20	432	950	902	1415	724	36	55	29
	89	25	484	1065	902	1415	724	36	55	29
	100	28	493	1085	902	1415	724	36	55	29
	126	36	595	1310	902	1415	724	36	55	29

NOTE: The above product is available in condenserless models (remote air cooled) 30HWA015-040, 30HL050, 060. Consult your product data catalog for listing of weights and dimensions.

Model 30HX

70-270 tons cooling



30HX
Ecologic™ Chiller

Features

- Narrow design.
- Microprocessor control.
- High efficiency.
- Chlorine-Free HFC 134a.
- Quiet operation.

Benefits

Reduces installation cost. Unit disassembly or wall removal unlikely.

Reduced service costs.

Low operating cost.

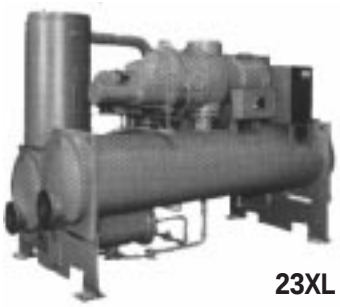
Ensured current & future adherence to environmental mandates.

Easier application.

Model	Nominal Capacity 50Hz kW	Nominal Capacity 60Hz tons	Machine Weight kg	Machine Weight lbs	Dimensions A mm	Dimensions B mm	Dimensions C mm	Dimensions A ft	Dimensions B ft	Dimensions C ft
30HX076	250	70	2591	5700	2591	847	1651	8.5	2.8	5.4
30HX086	280	80	2601	5723	2591	847	1651	8.5	2.8	5.4
30HX096	320	90	2661	5835	2591	847	1651	8.5	2.8	5.4
30HX106	350	100	2808	6177	2591	847	1707	8.5	2.8	5.6
30HX116	390	110	2916	6419	3353	847	1651	11.0	2.8	5.4
30HX126	420	120	2939	6465	3353	847	1651	11.0	2.8	5.4
30HX136	460	130	3940	6688	3353	847	1651	11.0	2.8	5.4
30HX146	490	140	3954	6718	3353	847	1651	11.0	2.8	5.4
30HX161	530	150	3387	7452	3353	879	1758	11.0	2.9	5.8
30HX171	560	160	3482	7660	3353	879	1758	11.0	2.9	5.8
30HX186	610	175	3570	7854	3353	879	1758	11.0	2.9	5.8
30HX206	700	200	4753	10457	3773	930	1860	12.4	3.0	6.1
30HX246	840	240	4734	10414	3773	930	1860	12.4	3.0	6.1
30HX261	880	250	4975	10944	3773	930	1860	12.4	3.0	6.1
30HX271	950	270	5004	11008	3773	930	1860	12.4	3.0	6.1

NOTE: The above product is available in condenserless models (remote air cooled) 30HXA.

Rotary Chillers



23XL

Hermetic Screw

Model 23XL

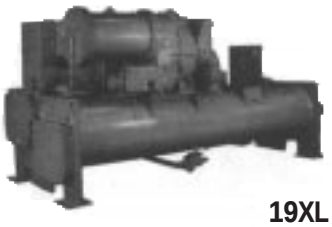
150-350 tons (530-1231 kW), HCFC-22
150-230 tons (457-810 kW), HFC-134a

Features	Benefits
■ Positive-pressure design uses HCFC-22. Select models available with HFC-134a.	Ensures current and future adherence to environmental mandates.
■ Field-serviceable screw compressor minimizes possible need for costly and time-consuming compressor replacement.	Cuts service costs and downtime with built-in reliability.
■ Direct Digital Product Integrated Control (PIC) monitors and displays over 100 functions and conditions, and displays over 125 operating and diagnostic conditions.	Simplifies troubleshooting.
■ Take-apart design allows unit to fit through 3-ft (1-m) doorways.	Minimizes installation costs.
■ Positive-pressure design keeps the footprint small.	Reduces floor space requirement.
■ Eliminates need for purging and its related refrigerant releases.	Protects the environment and minimizes refrigerant replacement expenses.
■ Built-in isolation valves allow internal refrigerant storage during chiller servicing, without time-consuming and refrigerant-releasing refrigerant transfer procedures.	
■ Excellent full- and part-load efficiency provides low overall cost of ownership.	
■ Quiet operation reduces the need for costly sound insulation in acoustically demanding applications.	

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
23XL	560	150	5015	11055	1473	2083	2921	58	82	115
	560	150*	8051	17750	1803	2311	4166	71	91	164
	650	175	5015	11055	1473	2083	2921	58	82	115
	650	175*	8051	17750	1803	2311	4166	71	91	164
	700	200	5176	11410	1473	2083	2921	58	82	115
	700	200*	8096	17850	1803	2311	4166	71	91	164
	810	230	5538	12210	1499	2134	2921	59	84	115
	810	230*	8375	18460	1803	2311	4166	71	91	164
	880	250	5697	12560	1499	2134	2921	59	84	115
	968	275*	8096	17850	1803	2311	4166	71	91	164
	1056	300*	8591	18940	1803	2311	4166	71	91	164
	1144	325*	8554	18860	1803	2311	4166	71	91	164
	1232	350*	9080	20020	1803	2311	4166	71	91	164

* Models compatible with HCFC-134a.

Chiller Systems



19XL

Hermetic Centrifugal Chiller

Model 19XL

200-550 tons (700-1935 kW), HFC-134a
300-600 tons (1055-2110 kW), HCFC-22

■ Positive-pressure design uses HCFC-22 or HFC-134a.	Ensures current and future adherence to environmental mandates.
■ Take-apart design allows unit to fit through 4-ft. (1.2-m) doorways.	Minimizes replacement costs.
■ Heavy-duty construction with steel-backed, babbitt-lined compressor sleeve bearings, and Kingsbury-type, self-leveling thrust bearings that stand up to tough, day-in, day-out operation.	Provide exceptional reliability.
■ Advanced compressor aerodynamics originally developed for jet engines.	Delivers high efficiency.
■ Operates under all load conditions with variable refrigerant metering.	
■ Positive-pressure design and ASME construction keep refrigerant inside chiller.	Protects the environment.
■ Built-in isolation valves allow internal refrigerant storage during service.	

Model	Nominal Capacity		Machine Weight		Dimensions					
	kW	tons	kg	lbs.	A	B	C	A	B	C
					mm			in		
19XL	1055	200	7670	16900	1670	2048	4159	66	81	164
	1055	300	7670	16900	1670	2048	4159	66	81	164
	1231	350	8260	18200	1670	2048	4159	66	81	164
	1231	350*	11350	25000	1835	2188	5681	72	86	224
	1407	400	9720	21400	1835	2188	4159	72	86	164
	1407	400*	11500	25300	1835	2188	5681	72	86	224
	1583	450	10120	22300	1835	2188	4159	72	86	164
	1583	450*	11900	26200	1835	2188	5681	72	86	224
	1759	500	10450	23000	1835	2188	4159	72	86	164
	1759	500*	12760	28100	1835	2188	5681	72	86	224
	1934	550	10500	23100	1835	2188	4159	72	86	164
	2110	600	10500	23100	1835	2188	4159	72	86	164

* High-efficiency design.

17M, P, S

Open-Drive Centrifugal Chiller

Model 17P40

1800-2000 tons HFC-134a

- Uses HFC-134a or HCFC-22.
- High efficiency for low operating cost.
- Open-type compressor—motor or turbine drive to match individual customer requirements.
- Industrial design and construction provide superior reliability, and serviceability, as well as long life.
- Microprocessor-based controls interface with Carrier Comfort Network (CCN).

Model	Nominal Capacity		Machine Weight**		Dimensions*					
	50Hz kW	60Hz tons	kg	lbs.	A	B	C	A	B	C
					mm			in		
17P40	6340-7040	1800-2000	96500	212743	7087	3480	3708	279	137	146

* Length & width may vary with nozzle arrangement & drive type.
** Weight is approximate, will vary with options.

Chiller Systems

17DA

Open-Drive Centrifugal Chiller

Model 17DA

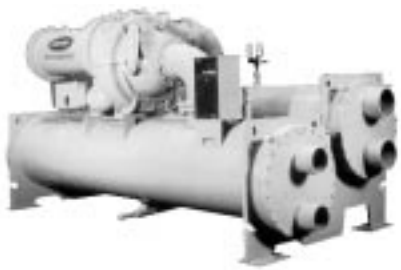
3000-6800 tons (10566-23926 kW), HFC-134a

■ Operates with chlorine-free HFC-134a.	Ensures adherence to environmental codes.
■ Positive-pressure design keeps air and moisture out of the chiller, eliminating need for purging and associated refrigerant releases.	Minimizes refrigerant replacement costs.
■ Atmospheric Lubrication System allows compressor component inspection and servicing without removal of refrigerant from chiller.	Improves serviceability and reduces down time, resulting in low maintenance costs.
■ Open-drive design provides driver-type flexibility. Availability of electric motor or turbine drive systems allows you to make the most economical choice for your application.	Allows optimum match to specific project requirements.
■ Custom selection of heat exchangers, compressor, and prime mover.	
■ Single-stage, high-efficiency shrouded impeller, precise variable inlet guide vanes, and diffuser ring control optimize performance throughout operating range.	Keeps operating costs low.
■ Dual-capacity control system eliminates need for hot gas bypass.	
■ Single bearing chamber cover allows quick access to bearings and carbon running seal.	Saves time and labor expenses.
■ Industrial design and construction provide superior reliability and long life.	
■ Custom-crafted PLC control and monitoring systems.	Matches project-specific specifications.
■ Flexible design to provide varying equipment installation requirements.	New and existing facility installations.

Model	Nominal Capacity		Machine Weight		Dimensions*					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
17DA	10566-24630	3000-7000	86638	191000	8.2	5.5	5.5	27	18	18

* Nominal dimensions without driver.
Actual dimensions vary by job application.

Chiller Systems



19XR

Hermetic Centrifugal Chiller

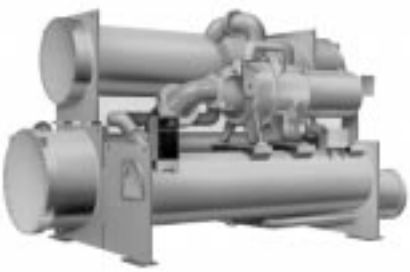
Model 19XR

350-800 tons (1231-2813 kW), HFC-134a

- Highest-efficiency chlorine-free chiller in the world. — No compromises on efficiency, safety and the environment.
- Positive-pressure, take-apart design, using environmentally friendly HFC-134a. — Zero ozone depletion potential means no phaseout.
- Heavy-duty construction with steel-backed, babbitt-lined compressor sleeve bearings and Kingsbury-type, self-leveling thrust bearings that stand up to tough, day-in, day-out operation. — Provide exceptional reliability.
- Advanced compressor aerodynamics originally developed for jet engines. — Delivers the highest chlorine-free efficiency in the world.
- Operates under all load conditions with variable refrigerant metering.
- Positive-pressure design and ASME construction keep refrigerant inside chiller. — Protects the environment.
- Optional isolation valves allow internal refrigerant storage during service.

Model	Nominal Capacity		Machine Weight**		Dimensions					
	kW	tons	kg	lbs	A	B	C	A	B	C***
					mm			in		
19XR	1231-	350-	7800	17200	1941	2190	4290	77	87	169
	1846	525	10204	22500	1941	2190	4290	77	87	169
			12698	28000	2055	2190	4290	81	87	169
			15420	34000	2159	2591	5385	85	102	212*
	1231-	525-	12245	27000	2055	2190	4290	81	87	169
	2814	800	14172	31250	2123	2241	4290	84	89	169

* This row for turbine option.
** Weights are typical.
*** Two-pass heat exchangers with nozzles on the same end. 2 ft. extended shells are avail. on the non-turbine unit.



19EX/17EX

19EX Hermetic and 17EX Open-Drive Centrifugal Chillers

Models 17, 19EX

800-2100 tons (2810-4920 kW), HFC-134a

- Operates with chlorine-free HFC-134a refrigerant. — Ensures adherence to environmental codes.
- Positive-pressure technology keeps air and moisture out of chiller, eliminating need for purging and associated refrigerant releases. — Minimizes costly refrigerant loss.
- Split-sleeve, steel-backed, babbitt-lined journal bearings. — Provides dependable operation year after year.
- Combination thrust and counterthrust, tilting pad, self-leveling, babbitt-lined Kingsbury-type thrust bearings.
- Precision-cast aluminum inlet guide vanes with aircraft-quality linkages.
- Self-balancing double helical gears.
- Delivers an efficient .56-.65 kW/ton. — Cuts operating costs.
- Compact design and take-apart bolted construction. — Installs at minimum expense.
- Internal storage vessel/pumpout unit eliminates remote storage requirements. — Keeps service costs low.
- Marine water boxes, optional on cooler and condenser. — Facilitate tube cleaning.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
19EX	2110-	600-	19051	42000	2692	3264	4724	106	128.5	186
	3520	1000								
	3520-	1000-	24494	54000	2858	3708	4724	112.5	146	186
	4920	1400								
	4920-	1400-	30845	68000	2858	3785	6172	112.5	149	243
	8090	2300								

2/2 pass, NIH/NIH.

Chiller Systems

19QA

Refrigerant Containment Options

Refrigerant Management System (RMS)

Model 19QA

A closed-loop transfer and storage system for isolating refrigerant during servicing or repairs.

- Removes oil, water and acids from refrigerant.
- Saves money by minimizing refrigerant losses.
- Compatible with: CFC-11, CFC-113 and HCFC-123.
- Can be applied to any manufacturer's chiller.

Model	Tank Size		Storage Capacity R-11 Liquid		Machine Weight		Dimensions					
							A	B	C	A	B	C
	cu ft	cu meter	kg	lbs.	kg	lbs.	mm			in		
19QA020	20	.57	727	1600	336	740	1651	737	1499	65	29	59
19QA030	30	.85	1114	2450	382	841	2413	737	1499	95	29	59
19QA040	40	1.13	1500	3300	428	942	3175	737	1499	125	29	59

VaporSaver™ II

A unique combination of pressure relief valve and full-metal, non-fragmenting rupture disk, the VaporSaver II provides superior protection and can save refrigerant during overpressure emergencies.

- Conserves increasingly scarce and costly refrigerants.
- Recently redesigned – now smaller, lighter and easier to install.
- Keeps air out of the chiller following an emergency pressure relief, preventing hardware damage.
- Optional connection to remote alarm or monitoring system.
- Meets ASHRAE recommendations.
- ASME flow-certified.

PREVAC® PLUS

A pressure-sealing system that prevents refrigerant contamination and catastrophic loss, while providing on-demand pressurization for safe chiller leak testing.

- Conserves valuable CFCs and HCFCs.
- Allows fast, frequent, non-disruptive leak testing.
- Allows minor repairs to be performed at O psig.
- Meets EPA Clean Air Act requirements.
- Reduces potentially unsafe temporary electrical connections.
- Warns of impending excessive chiller pressure.
- Keeps contaminants out of idle chillers.

External Oil Filter Assembly

Provides for quick and easy oil filter change in your chiller.

- Changeover valve.
- Built-in mounting bracket.
- Center post construction.
- Allows changing of oil filter(s) while machine is running.
- No need for isolation valves.
- Uninterrupted flow.
- Easily mounted.
- Fast cartridge changeout.
- Designed to help protect the environment.

Chiller Systems

Enviro-Purge™

High efficiency purge system for CFC-11, CFC-113, CFC-114 and HCFC-123 chillers.

- Protects against refrigerant loss.
- Lowers operating and maintenance cost.
- Increases chiller reliability and efficiency.
- Microprocessor controls analyze purge and chiller performance.
- Operates independent of chiller operation.
- Self-contained HFC-134a refrigeration system.

Sonic RMS™

Refrigerant Management System for multiple CFC-11, CFC-113, CFC-114 and HCFC-123 chillers.

- Optimal refrigerant conservation.
- High efficiency purging and separation.
- Immediate noncondensible removal.
- Complete refrigerant recovery/recycling.
- Distills refrigerant to remove oil and moisture.
- Overpressure protection prevents catastrophic refrigerant loss.

	Tank Size		Storage Capacity		Dimensions	
Model	Cu. Ft.	Cu. Meter	CFC-11@	80% Full	Inches	Cm
RMS 1750A	24	.68	1771 Lbs	803 Kg	42x44x98	107x112x249
RMS 1750A	64	1.47	4723 Lbs	2142 Kg	60x62x98	152x157x249
RMS 1750A	119	2.37	8757 Lbs	3972 Kg	72x74x98	183x188x249

PRELERT™

An early warning alarm system prevents catastrophic refrigerant loss due to overpressure conditions.

- Continuous monitoring of refrigerant pressures.
- Audible and visible alarms can be transmitted to a building automation system for remote warning.
- Interlocking auxiliary contacts.
- Helps prevent a rupture disk from bursting.
- Can initiate corrective actions to reduce pressure.
- Records duration of overpressurization condition.

Air Handling Units

40RM/RMQ/RMS

Direct Expansion Packaged Air Handling Units

Model 40RM/RMQ

21-105 kW

- High static capability – all models capable of 500 Pa (2.0 inches) ESP (or greater) at nominal airflow.
- Sloped condensate drain pans.
- Factory-installed TXVs.
- Factory-installed motors and contactors.
- Cleanable insulation with anti-microbial coating.

Model	Nominal Capacity		Nominal Airflow		Machine Weight		Dimensions					
	50Hz	60Hz					A	B	C	A	B	C
	kW	tons	L/s	cfm	kg	lbs	mm			in		
40RM007	21	6	1133	2400	173	381	1244.6	1449.3	713.8	49	57	28
40RM008	26	7.5	1416	3000	175	385	1244.6	1449.3	713.8	49	57	28
40RMQ008	26	7.5	1416	3000	175	385	1244.6	1449.3	713.8	49	57	28
40RM012	35	10	1888	4000	184	405	1244.6	1449.3	713.8	49	57	28
40RMQ012	35	10	1888	4000	194	427	1244.6	1449.3	713.8	49	57	28
40RM014	43	12.5	2360	5000	304	670	2260.6	1449.3	713.8	89	57	28
40RM016	52	15	2831	6000	307	677	2260.6	1449.3	713.8	89	57	28
40RMQ016	52	15	2831	6000	323	713	2260.6	1449.3	713.8	89	57	28
40RM024	70	20	3775	8000	313	690	2260.6	1449.3	713.8	89	57	28
40RM028	87	25	4719	10000	467	1020	2514.6	1690.6	838.2	99	67	33
40RM034	105	30	5663	12000	467	1030	2514.6	1690.6	838.2	99	67	33

Chilled Water Packaged Air Handling Units

Model 40RMS

26-105 kW

- High static capability – all models capable of 500 Pa (2.0 inches) ESP (or greater) at nominal CFM.
- Sloped condensate drain pans.
- Face split coils on sizes 012 and above.
- Factory-installed motors and contactors.
- Cleanable insulation with anti-microbial coating.

Model	Nominal Capacity		Nominal Airflow		Coil Face Area		Machine Weight		Dimensions					
	50Hz	60Hz							A	B	C	A	B	C
	kW	tons	L/s	cfm	sq m	sq ft	kg	lbs	mm			in		
40RMS008	26	7.5	1416	3000	0.77	8.3	177	390	1244.6	1449.3	713.8	49	57	28
40RMS010	29	8.5	1604	3400	0.84	9.0	177	391	1244.6	1449.3	713.8	49	57	28
40RMS012	35	10	1888	4000	0.91	9.8	177	391	1244.6	1449.3	713.8	49	57	28
40RMS014	43	12.5	2360	5000	1.28	13.8	300	661	2260.6	1449.3	713.8	89	57	28
40RMS016	52	15	2831	6000	1.54	16.6	307	677	2260.6	1449.3	713.8	89	57	28
40RMS024	70	20	3775	8000	1.79	19.3	310	683	2260.6	1449.3	713.8	89	57	28
40RMS028	87	25	4719	10000	2.30	24.8	469	1035	2514.6	1690.6	838.2	99	67	33
40RMS034	105	30	5663	12000	2.59	27.9	473	1042	2514.6	1690.6	838.2	99	67	33

Air Handling Systems

39L

39L Compact, Economical Air Handlers

Model 39L
1,500-9,000 cfm

Available in seven sizes for vertical and horizontal draw-through applications. Flexibility to meet a wide range of cooling, heating and ventilation requirements and a small footprint to ensure economical use of building space.

- Double-skin access doors.
- Shipped fully assembled.
- Double-wall stainless steel drain pan.
- Static pressure to 5 in. wg.
- Coils available in both small and large face areas.
- Optional copper tube, copper fin coils.

Optional product-integrated controls provide single-source responsibility:

- Occupied/unoccupied scheduling.
- Local and remote alarm monitoring.
- Mixed air damper control.
- Duct static pressure control.
- Coil valve control.
- Nighttime free cooling.
- CO_2 and VOC sensor inputs.

Model	Nominal Capacity*		Machine Weight†		Dimensions†					
	50Hz	60Hz			A	B	C	A	B	C
	L/s	cfm	kg	lbs.	mm			in		
39LB03	706	1496	68	150	740	962	616	29	38	24
39LB06	1225	2596	95	210	840	1162	716	33	45	28
39LB08	1708	3619	140	308	940	1262	816	37	49	32
39LB10	2063	4372	160	352	940	1462	816	37	57	32
39LB12	2419	5126	184	405	940	1662	816	37	65	32
39LB15	3146	6666	211	465	1140	1662	1016	44	65	40
39LB18	3628	7689	236	521	1240	1662	1116	49	65	44

*Capacities based on small face area coil @ 550 ft./m.
† Weights and dimensions are for typical cooling only, horizontal, less coil & motor.

Air Handling Systems

39NC

39NC Rooftop Central Station Air Handler

Model 39NC

3,500-46,000 cfm, sizes 7-92

Carrier's 39NC Rooftop Air Handling Unit is available in nominal airflow ranges from 3,500 to 46,000 cfm. The units may be curb mounted or pier mounted and set the standard for water-tight integrity. The unit is designed to withstand water leakage at cabinet pressures of -5" w.g. while subject to a rainfall rate of 13 inches per hour. The 39NC is available in draw-thru or blow-thru configurations. Heating and cooling flexibility is achieved with DX, chilled water, hot water, or steam coils. Indoor air quality features include double-walled construction and sloped, stainless steel drain pans.

Features

- Double-walled construction, with 2", 3 lb mineral wool insulation.
- Internally isolated fan sled assemblies - reduce vibration transmission.
- Gasketing between overlapping panels - ensures leak-free performance.
- Casing withstands 5" w.g. negative pressure and 9" w.g. positive pressure.
- Water-tight design.
- 16 gauge exterior panels.
- Double-walled access doors.
- Double-walled condensate drain pan with stainless steel liner.
- ARI 410 certified heating and cooling coils.
- ARI 430 fan and cabinet system.
- Small footprint.
- Coil tracks to allow slide-out coil removal.
- Component and accessory flexibility to meet a wide variety of applications.
- Curb or pier mounted.
- ETL agency approved.

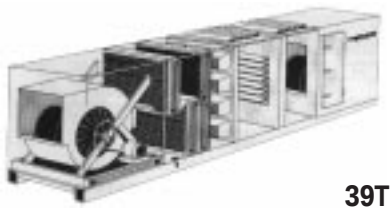
Carrier's 39NC Rooftop Air Handler sets the standard for quality construction and water-tight integrity. This unit design has undergone rigorous testing in order to ensure a weathertight unit interior and thus promote healthy IAQ. Units may be supplied as standard with forward curved or air foil fan systems.

The 39NC is a horizontal draw thru or blow thru unit. The entire unit is ARI 430 certified and the coils are ARI 410. In addition, the unit is agency approved to the latest safety standards by ETL.

Model	Nominal Capacity		Coil Area
	50Hz L/s	60Hz cfm	
39NC07	1650	3500	6.7
39NC09	2123	4500	9
39NC11	2595	5500	10.5
39NC13	3067	6500	13
39NC17	4010	8500	16.2
39NC21	4954	10500	20.8
39NC26	6133	13000	25.8
39NC32	7549	16000	32.5
39NC39	9200	19500	38.8
39NC49	11560	24500	49.2
39NC61	14390	30500	60.8
39NC74	17457	37000	73.8
39NC92	21703	46000	91.6

Note: Airway length and weight are dependent upon unit configuration. Check product catalog for component dimensions and weights.

Air Handling Systems



39T

Model 39T

3,500-46,000 cfm, sizes 7-92

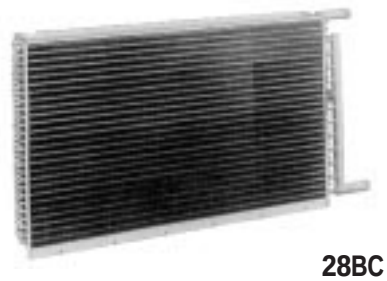
Flexible, compact units designed with unlimited versatility:

- Horizontal or vertical draw-through/ blow-through.
- Forward-curved, airfoil, and plenum fans.
- Sloped, stainless steel, double-wall condensate coil drain pan complies with ASHRAE Standard 62.
- Single or double-wall construction.
- ACAPS-ARI certified computer coil selection.
- Modular construction for installation and application flexibility.
- Efficient design means reduction in required space—units require up to 20% less space than competitive units.
- Optional product-integrated controls with indoor air quality features such as CO_2 and volatile organic compound sensor inputs.
- All external panels are gasketed to prevent air leakage.

Unit	Nominal Capacity*		Dimensions**			
			A	B	A	B
	L/s	cfm	mm		in	
39T7	1740	3688	870	1364	54	35
39T9	2322	4921	972	1464	58	39
39T11	2713	5748	972	1664	66	39
39T13	3385	7173	1072	1864	74	43
39T17	4198	8894	1172	1962	78	47
39T21	5399	11440	1372	2064	82	54
39T26	6708	14214	1472	2262	90	58
39T32	7933	16809	1470	2364	58	94
39T39	9183	19457	1570	2562	62	101
39T49	12038	25506	1772	2864	70	113
39T61	15276	32368	1970	3162	78	125
39T74	18536	39829	2072	3562	82	141
39T92	23671	50155	2470	3562	98	141

* Capacity is based upon 2.794 m/s (550 ft./m) face velocity.

** Airway length is variable upon different component arrangements. Check the product catalog for individual airway length of components.



28BC

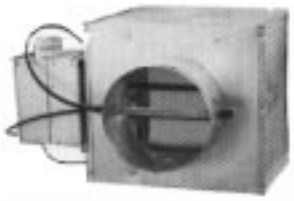
Nu-Fin Coils

Heating and Cooling Coils

Model 28 Series

Nu-Fin 28B coils are available for chilled and hot water applications, as well as booster heating. Aluminum or optional copper fins in 8, 11, and 14 fins/inch. Heavy-gauge galvanized steel casings or optional stainless steel. Expanded offerings in lengths from 24" to 144" in one-inch increments, and heights from 15" to 55" in 2 1/2-inch increments on the chilled (28BC) and hot (28BH) water coils, with 12" to 42" lengths and 5" to 17-1/2" on the booster (28BB) heating coils. Still available are the 28S Series steam coils. The working pressure is 175 psig @ 400°F for the 28BC, BH, and BB, as well as the 28SY and 28SZ.

Air Terminals



35D

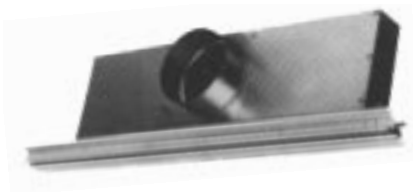
Single-Duct VAV Terminals

Model 35D

200-4000 cfm

For large zones, with high performance and reliability for a wide range of building applications.

Model	Nominal Capacity		Control Options	Unit Options
	L/s	cfm		
35D	94-1888	200-4000	Pneumatic Analog Electronic Carrier VVT Carrier CCN (DDC)	Reheat Coils Attenuators Octopus Foil-Faced Insul.



35BD

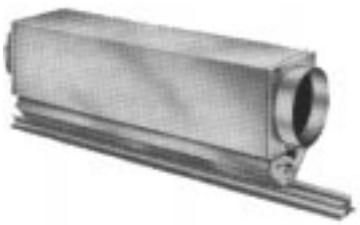
Linear Slot Diffusers

Model 35BD

100, 200, and 400 nominal cfm

Provide excellent air distribution for either standard or low-temperature supply air applications. Aesthetically integrate into most common T-bar ceiling systems.

Model	Types	Nominal Capacity		Diffuser Lengths
		L/s	cfm	
35BD	Cooling			2, 4, 5 (ft) 610,1219,1524 (mm)
	AG 1&2 way	94	200	
	AH 1&2 way	188	400	
	Cooling/Heating			
	DG 2&3 slot	94	200	
	DH 2&3 slot	188	400	
	Heating			
	HS 1 slot	47	100	



37H

Moduline VAV Terminals

Models 37HS, HC

100, 200, and 400 nominal cfm

For small-zone VAV comfort control. Feature all-in-one plenum, damper and diffuser design. Snap-on system powered controls (HS) or optional DDC control module (HC) make zone changes easy. Quick installation with T-bar mounting brackets. Optional control interface accessories.

Model	Nominal Capacity		Diffuser Lengths			Diffuser Types
	L/s	cfm	Nom. ft	in	mm	
37HS1	47	100	2	23	584	2 slot - 2 way
37HC1	47	100	4	47	1194	
37HS2	94	200	4	47	1194	2 slot- 1 way
37HC2	94	200	5	59	1499	3 slot - heat/cool
37HS4	188	400	4	47	1194	
37HC4	188	400	5	59	1499	

Air Handling Systems

45T

Fan-Powered Terminals

Model 45S – Constant-Flow Series Type
Model 45T – Variable-Flow Parallel Type

500-4000 nominal cfm

For large-zone overhead cooling/heating systems. Available in series or parallel flow arrangements with either hot water or electric heating coils.

Model	Types	Nominal Capacity		Control Options
		L/s	cfm	
45S	Series	236-1416	600-3000	Pneumatic Analog Electronic
45T	Parallel	236-1888	500-4000	Carrier VVT Carrier CCN (DDC)

Induction Air Terminals

For high heating/cooling loads and perimeter spaces. Two- and four-pipe models in many horizontal, vertical, and lo-boy configurations. Individual temperature control by water valve or air bypass with exclusive self-contained control powered by duct air pressure. Computer selection available.

Model	Models		
	Two-pipe	Four-pipe	Electric Heat
Bypass Control	36RV, RH	—	36TE
Water Control	36SL, SC, ST, SV, SH	36SD, SP, SM, SJ	—

36R, TE

Bypass Models

Models 36R, TE

19-132 cfm, 1080-7100 Btuh

The 36R Bypass Weathermaster units consist of the base induction unit and have a self-contained bypass damper assembly. The bypass damper blade is operated by a neoprene bellows, which inflates from primary air pressure. The damper blade is supported by and rotates about a fixed edge, which eliminates bearings and the need for any lubrication.

- 36RV, TE Vertical—Wall Hung.
- 36RH Horizontal—Ceiling Mounted.
- 36RM Vertical, Manual Control—Wall Hung.
- 36RP Vertical, Pneumatic Control—Wall Hung.

36S

Water Control Models

Model 36S Series

19-132 cfm, 1770-8900 Btuh

The 36S Water Control Weathermaster units consist of the base induction unit and have one or two coils for either two- or four-plpe operation.

- 36SV Vertical—Wall Hung.
- 36SH Horizontal—Ceiling Mounted.
- 36SL Low—Wall Hung.
- 36SC Vertical, High Capacity—Wall Hung.
- 36ST Vertical, Two-Coil Unit—Wall Hung.
- 36SD Vertical, Two-Coil Unit—Wall Hung.
- 36SJ Horizontal, Two-Coil Unit—Ceiling Mounted.
- 36SM Low, Two-Coil Unit—Wall Hung.
- 36SP Vertical, Two-Coil Unit, High Capacity—Wall Hung.

Room Fan Coil Products

Versatile fan coil models to meet any application need. Available with a wide variety of optional motors, coils, cabinet changes.

42CA

42VA

Model	Description	Nominal	Capacity
Vertical Models			
42VA	Furred-in	94-566	200-1200
42VB	Cabinet	94-566	200-1200
42VF	Slope top cabinet	94-566	200-1200
42VC	Low-boy furred-in	94-283	200-600
42VE	Low-boy cabinet	94-283	200-600
42VG	Furred-in stud	70-142	150-300
42SG	Furred-in stack	142-566	300-1200
42SJ	Back-to-back furred-in stack	142-566	300-1200
42SH	Cabinet stack	142-566	300-1200
Horizontal Models			
42CA	Furred-in	94-566	200-1200
42CE	Furred-in w/plenum	94-566	200-1200
42CG	Cabinet	94-566	200-1200
42CK	Furred-in w/telescoping swing-down panel	94-566	200-1200
42CF	Hi-static furred-in	188-472	400-1000
Ducted Models			
42DA	Furred-in	283-944	600-2000
42DC	Furred-in w/plenum	283-944	600-2000
42DE	Cabinet	283-944	600-2000
42DD	Vertical-closet	283-944	600-2000
Belt-Drive Models			
42BH	Hi-static system	377-1888	800-4000

Carrier Comfort Network

Benefits

The Carrier Comfort Network (CCN) is the most advanced technology to evolve from Carrier's thorough knowledge of both comfort and controls. CCN addresses a wide range of comfort, operational, air quality and energy management objectives by allowing separate pieces of Carrier HVAC equipment, non-Carrier equipment and related building systems to work in harmony.

The Carrier Comfort Network integrates reliable DDC control technology with high-quality HVAC equipment for maximum operational efficiency and precise comfort levels.

Improved Operational Efficiencies

- CCN provides all the benefits of an energy management system, allowing owners to manage energy consumption in an economically and environmentally responsible manner.
- Setback scheduling, staging and load-shedding are easily directed for the most efficient energy use.
- Operators can respond immediately to off-normal situations, preserving both comfort and energy efficiency.
- CCN can capture data on equipment run-times and consumables usage, for energy analysis and decision-making.

Comfort and Air Quality

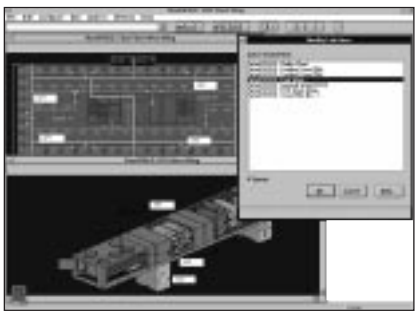
- Communicating electronic controls improve occupant comfort through precise control of temperature, relative humidity and outdoor air ventilation rates.
- Multiple comfort zones may be created within a building, providing individualized comfort control.

Optimized System Control

- Centralized control eliminates a host of manual control tasks and simplifies troubleshooting. The result: more efficient, productive facility management.
- Continuous equipment monitoring, from on-site or any remote location, helps extend equipment life and reduce service costs.
- CCN's modular architecture and flexibility facilitate future expansion projects.

Enhanced Diagnostic Capabilities

- The network gives the operator the ability to identify which piece of equipment is not operating properly, and what parts are affected.
- All servicing needs can be identified on-site or from a remote location.



Operator Interfaces

ComfortWORKS Software

The premier operator interface for CCN, ComfortWORKS offers a comprehensive package of unique features designed to enhance building performance and improve operating efficiency.

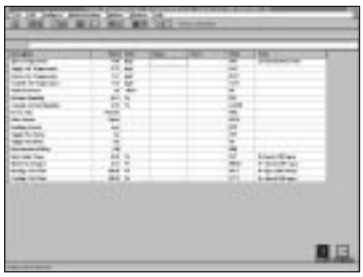
- Multi-tasking capabilities.
- WorkSPACE graphics.
- Local area networking.
- Dynamic trends.
- Managerial reports.
- Alarm routing/filtering.
- Remote access.
- Password protection.

Network Service Tool Software

This software package, designed to run on a portable PC, allows technicians to have local access to any CCN system component. It can also connect via a standard modem to a remote CCN system. Utilizing easy-to-follow, plain-language prompts, the Network Service Tool allows qualified technicians to:

- Search CCN for active devices.
- Display current data dynamically in both customary U.S. and metric units.
- Configure operating parameters such as time schedules, temperature set-points and system gains.
- Manually override automatic controls.
- Create and edit custom programs (via BEST and BEST++).
- Trend system points for diagnostic use.

Comfort Network



Building Supervisor Software

This easy-to use software package provides a graphical point of entry to the entire CCN system. The Building Supervisor allows users to monitor and manage their system from an IBM-compatible PC or laptop.

- View equipment status.
- Change temperature setpoints.
- Modify time schedules.
- Built-in screen graphics.
- Off-site monitoring.
- Remote access.
- Managerial reports.
- Easy-to-use software.

Comfort System Software

This software package allows either building owners/tenants or technicians local or remote access to the 33CS Series Comfort System Controls. This is a DOS-based program that operates like Windows.

- View equipment status.
- Change temperature setpoints.
- Configure time schedules.
- Remote access.
- Easy-to-use software.
- Compatible with 33CS series controls.
- Diagnose system operation.
- Verify fan/filter status.

Comfort Controllers 1600/6400

Carrier Comfort Controllers are microprocessor-based controllers that provide all the features necessary for complete stand-alone or network control of non-Carrier products or existing Carrier equipment. Comfort Controllers are compatible with the Carrier Comfort Network, Carrier's VVT Comfort System and Temp Comfort System.

1600

Comfort Controllers make it possible to bring DDC technology to all of your facility–critical equipment and systems–chillers, rooftops, air handlers, cooling towers, unit heaters, circulating pumps, exhaust fans, interior and exterior lighting, and more.

The Comfort Controller 1600 monitors and controls up to 16 "on–board" points. Adding extra points of control to meet future expansion needs is easy–simply add a second Comfort Controller 1600 or select Carrier's Comfort Controller 6400.

The Comfort Controller 6400 offers 16 universal "on-board" points and can grow beyond these 16 points as your applications grow. Through the use of 6400 I/O expansion modules, the 6400 provides the capability to control and monitor up to 64 hard-wired points. To add a point, the user simply needs to provide, mount and wire the necessary field sensor (i.e., temperature sensor, start/stop relay, etc.) and configure the point into the system.

6400

Pre-engineered Control Routines

Comfort Controllers include a library of proven control routines with a "fill-in-the-blanks" format for easy programming. The built-in routines include, but are not limited to:

- Staged thermostat–four stages plus fan.
- Staged control–six stages, for variable air volume and constant volume air handlers with electric heat and/or DX cooling and cooling towers.
- Lead/lag pump control with automatic fault logic.
- Heating and cooling coil control.
- Mixed air damper control.
- Indoor air quality control.
- Air and water reset.
- Humidification.
- Sequenced cooling and heating coil control for constant volume applications.
- Static pressure and fan tracking control.

In addition to the pre-engineered control routines, the Comfort Controller may be custom-programmed via Carrier's BEST++ programming language.

Comfort Network

Additional Features

Built-in Time Clock– A 365-day time clock simplifies time scheduling. It features eight different program periods per day and includes 18 holiday periods plus automatic daylight savings and leap year adjustment.

Energy Management– In combination with optional network modules, the Comfort Controller can help reduce energy costs by integrating loadshedding, facility time scheduling and system maintenance functions.

Recording Capability– The Comfort Controller can record electricity, gas and water usage so that building consumption can be monitored.

Easy Troubleshooting– Clear diagnostic LED signals allow for quick diagnosis and minimum downtime. The on-board trending feature helps provide a "picture" of the events prior to an abnormal occurrence, greatly reducing troubleshooting time. Alarm conditions are immediately broadcasted so situations can be addressed before occupant comfort is affected.

Operator Interfaces– Comfort Controllers may be configured and monitored with Carrier's ComfortWORKS, Building Supervisor or Network Service Tool software. A handheld Local Interface Device (LID) provides for easy viewing, monitoring and configuration of the Comfort Controller without PC.

Temp and VVT Comfort Systems

Carrier's TEMP and VVT Comfort Systems combine comprehensive control capabilities, flexibility and ease of installation, making them ideal for a wide range of small building types, including school systems, retail stores, healthcare facilities and offices.

The TEMP Comfort System offers centralized control of single zones, via a flexible network of communicating Carrier Temp thermostats. The VVT Comfort Systems enable a single-zone heating and cooling unit to provide multi-zone comfort. In addition to delivering personalized comfort in each zone, the VVT Comfort System's advanced controls can dramatically reduce operating costs over the life of the system.

- Personalized comfort.
- Energy management.
- Indoor air quality.
- 365-day time clock.
- 8 time periods per day.
- 18 holiday schedules.
- No batteries required.
- Access security.
- System diagnostics.
- Design flexibility.
- Tenant metering.
- Setpoint limiting.
- Raised soft rubber setpoint buttons.
- Easy to use.
- Easy to program.
- Compatibility with Comfort Controller 1600/6400.

Digital Air Volume (DAV) System

Carrier's Digital Air Volume (DAV) System offers completely integrated control of air terminal units. Using DAV, the operation of self-contained units or air handlers is automatically adjusted to meet a zone's heating and cooling requirements. The Carrier Comfort Network provides the communications link between the HVAC equipment to maintain the DAV system's integrated system operation and performance.

- Zone-directed control.
- System control strategies, like morning warm-up (heating) and adaptive optimal start (cooling).
- Night-time free cooling.
- System information via software, zone space temperature, CFM, BTUH, supply air temperature, primary damper position.
- Pressure-independent airflow.
- Indoor air quality.
- Demand limit control.
- After-hours operation.
- Monitoring and alarming capabilities.
- Individual temperature setpoints.
- Air distribution.

Comfort Network

33CS

Commercial Programmable Thermostat

Model 33CS

Today's building owner demands a comfortable and productive indoor environment at reduced operating costs. In order to provide this, the heating and air conditioning systems that are installed in today's commercial buildings require a state-of-the-art intelligent controller. This intelligent controller must be able to maintain precise temperature, provide energy-efficient operation, and above all must be user-friendly.

Carrier's 33CSPTN-01 commercial thermostat provides all this through advanced technology and easy-to-use features. In addition to all of this, the designer appearance will blend into any decor.

The 33CSPTN-01 is perfect for offices, retail stores, schools, health care facilities and manufacturing plants. Some of the benefits include:

Features	Benefits
■ Keypad lockout.	Ensures security and eliminates lockboxes.
■ Optimized Fan Operation.	Energy savings.
■ Individual 7-Day Programming.	Flexible scheduling capability and energy savings.
■ No batteries required.	Saves money.
■ Remote Temperature Sensor.	Ease of installation.
■ Temperature Sensor Averaging.	Enhanced comfort.
■ Outdoor Air Temperature Sensor.	Lock out heating/cooling for energy savings.
■ Clean filter indicator.	Enhances Indoor Air Quality.
■ Auto Changeover.	Hands-off operation.
■ Backlit LCD.	Easy-to-read display.
■ Copy Day Function.	Easy programming.
■ Smart Recovery.	Enhanced comfort and energy savings.

Comfort Network

ODS Part#	Model Number	Description
VVT unit control relay packs & additional relay packs		
920007	CHR-03	CHR-03 unit control relay pack - 1 stage ht. 1 stage cool, fan
920008	CHR-06	CHR-06 unit control relay pack - 2 stage ht. 2 stage cool, fan, rev. valve
920010	HR-03	HR-03 supplemental heat relay pack - 2 stage heat, fan
VVT electronic zone dampers		
920061	ZD-06	ZD-06 zone damper - 6" round w/actuator
920062	ZD-08	ZD-08 zone damper - 8" round w/actuator
920064	ZD-10	ZD-10 zone damper - 10" round w/actuator
920065	ZD-14	ZD-14 zone damper - 14" round w/actuator
920066	ZD-16	ZD-16 zone damper - 16" round w/actuator
920099	RD-0810	RD-0810 zone damper - 8" x 10" rectangular w/actuator
920100	RD-0814	RD-0814 zone damper - 8" x 14" rectangular w/actuator
920101	RD-0818	RD-0818 zone damper - 8" x 18" rectangular w/actuator
920102	RD-0824	RD-0824 zone damper - 8" x 24" rectangular w/actuator
Sensors & sensor accessories		
920077	RRS	RRS-remote room sensor - (operating range 30 to 180 degrees F)
920089	OAS	OAS-outdoor air sensor - (operating range 0 to 150 degrees F)
Comfort System TEMP & VVT		
33CSTMT-01	–	TEMP monitor w/time
33CSTM-01	–	TEMP monitor
33CSVMT-04	–	VVT monitor (4 zone) w/time
33CSVM-04	–	VVT monitor (4 zone)
33CSVMT-16	–	VVT monitor (16 zone) w/time
33CSVM-16	–	VVT monitor (16 zone)
33CSVMT-32	–	VVT monitor (32 zone) w/time
33CSVM-32	–	VVT monitor (32 zone) w/time
33CSBC-00	–	VVT bypass controller
33CSZC-01	–	VVT zone controller
33CSNA-01	–	Network access module
33CSUCE-06	–	Unit controller w/econ (outdoor duty)
33CSPS-01	–	Pressure sensor (0-0.5")
33CSPS-02	–	Pressure sensor (0.5-2.0")
33CSAS-01	–	Airflow sensor switch (0.5-7.5)
33CSFS-01	–	Filter sensor switch (0.17-0.55)
920286	–	PS harness (IAQ to zone damper)
920222	–	Multi harness (air/fan to monitor damper)
33CSHA-01	–	Disk: help screens (Mon/Byp/Zc)
33CSTKT	–	TEMP kit w/time (1 count)
33CSTK	–	TEMP kit (1 count)
33CSTHT-01	–	TEMP kit w/time (100 count)
33CSTH-01	–	TEMP kit (100 count)
33CSTPT-01	–	TEMP pack w/time (40 count)
33CSTP-01	–	TEMP pack (40 count)
CGCDXSEN001A00	–	IAQ sensor wall
CGCDXSEN002A00	–	IAQ sensor wall w/LED
CGCDXSEN003A00	–	IAQ sensor duct
CGCDXGAS003A00	–	IAQ calibration kit
CGCDXPRM001A00	–	IAQ software program
583-300	–	IAQ economizer unit drawing package
Carrier Comfort Products - Building Supervisor		
CEAS121371-07	BS IIIM B/G	BS III V2.3 multi-bldg/graphic 3.5"
CEAS121367-05	NST III	Network service tool III V2.1
CEAS121376-03	NST III TRACE	Network service tool trace option
Carrier Comfort Products - ComfortWORKS User Interface		
CEAS130186-01	CWMU	ComfortWORKS multiuser
CEAS130185-01	CWSU	ComfortWORKS single user version
Carrier Comfort Products - Comfort Controller & Accessories		
CEPL130202-01	1600CC	1600 comfort controller
CEPL130201-01	6400CC	6400 comfort controller
CEPL130203-01	6400IO	6400 input/output module
CEPL130204-01	6400HOA	6400 hand-off auto switch
CEPL130008-20	CCLD	Comfort control local display/user interface
Carrier Comfort Products - System Software Options & Accessories		
CEAS420876-02	REPEAT	Reporter module
CEFA121498-02	AUTO GATE 8088	Autodial gateway III 8088 module
CEFA121072-05	VVT GATE 8052 CIO	VVT gateway 8052 CIO module 8052
CEFA121074-04	LOAD/DATA 8052 CIO	Loadshed & data X'fer CIO module 8052
CEFA121196-02	DATA COLL/XFER 8052	Data collection/data X'fer 8052
CEFA121321-05	DATA COLL/XFER 8088	Data collection III/data X'fer 8088
CEFA121197-02	NDS 8052 CIO	NDS 8052 CIO module
CEFA121198-03	BRID/NDS 8052	Bridge & NDS 8052 CIO
CEFA121313-01*	T BILL 800 CIO	Tenant billing option 8088 CIO
CEAS121443-01†	MAINT MGT	Maintenance management option
CEFA121442-01	FAC TIME 8088	Facility time schedule 8088
CEFA121430-01	TIME FORCE 8088	Timed force option 8088
CEFA121449-01	ALARM PRNT	Alarm printer interface option
CEFA121480-01	WSM 8088	Water system manager (WSM) 8088
CEFA121335-01	HSM 8088	Hydro-Hi Q system manager (HSM) 8088
CEFA121338-01	PLC 115 VOLT	Primary hydrosource loop controller 115
CEFA110022-02	PSM	PTAC system manager
CEFA121551-01	F DESK	Front desk interface module
CEFA121479-03	FLOW I GATE	Flotronic I gateway
CEFA121289-03	DATA 8052 CIO	Dataport I 8052
CEFA121301-01	32MP GATE	32 MP gateway 8052
CEFA121208-02	CSM	Chillervisor system manager
CEAS121478-01	CFID	CFID best program CLG towers
CEAS110021-14	TSM	Terminal systems managers II 8088
CEFA130004-01	FSM PSIO	Flotronic system manager PSIO

48SS

Outdoor Single Packaged

Single-Packaged Standard Efficiency Gas Heating/Electric Cooling

Model 48SS

1.5-5.0 tons – 60Hz only

- Standard efficiency levels at 10.0 SEER.
- Sound rating levels as low as 7.4 Bels.
- Annual Fuel Utilization Efficiency (AFUE) for gas heat of 81%.
- Gas heating with high, medium or low factory options.
- Scroll compressors found on the 4- and 5-ton sizes.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Commercial-grade base rails are factory-installed options.
- Units are listed by UL and CUL, certified by ARI.
- Three-speed direct-drive indoor fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62.
- Equipped with Integrated Gas Control (IGC) Board that provides self-diagnostics to simplify trouble-shooting. Also provides industry-exclusive anti-short cycle gas heat protection.
- Gas heat section designed with tubular heat exchangers and direct spark ignition to maximize heating efficiency.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
48SS-018040	–	–	1.5	135	272	1259	1109	613	50	44	24
48SS-024040	–	–	2	149	303	1259	1109	613	50	44	24
48SS-024060	–	–	2	154	315	1259	1109	613	50	44	24
48SS-030040	–	–	2.5	156	320	1259	1109	613	50	44	24
48SS-030060	–	–	2.5	162	324	1259	1109	613	50	44	24
48SS-030080	–	–	2.5	162	324	1259	1109	613	50	44	24
48SS-036060	–	–	3	164	336	1259	1109	613	50	44	24
48SS-036080	–	–	3	164	336	1259	1109	613	50	44	24
48SS-036100	–	–	3	169	348	1259	1109	613	50	44	24
48SS-036120	–	–	3	169	348	1259	1109	613	50	44	24
48SS-042060	–	–	3.5	181	375	1259	1109	714	50	44	28
48SS-042080	–	–	3.5	181	375	1259	1109	714	50	44	28
48SS-042100	–	–	3.5	187	387	1259	1109	714	50	44	28
48SS-042120	–	–	3.5	187	387	1259	1109	714	50	44	28
48SS-048080	–	–	4	139	414	1259	1109	866	50	44	34
48SS-048100	–	–	4	205	426	1259	1109	866	50	44	34
48SS-048120	–	–	4	205	426	1259	1109	866	50	44	34
48SS-048140	–	–	4	205	426	1259	1109	866	50	44	34
48SS-060080	–	–	5	217	453	1259	1109	866	50	44	34
48SS-060100	–	–	5	222	465	1259	1109	866	50	44	34
48SS-060120	–	–	5	222	465	1259	1109	866	50	44	34
48SS-060140	–	–	5	222	465	1259	1109	866	50	44	34

NOTE: Weights and dimensions do not include base rail.

Packaged and Split Systems

50SS

Single-Packaged Standard Efficiency with Electric Heating/Electric Cooling

Model 50SS

1.5-5.0 tons

- Standard efficiency levels at 10.0 SEER.
- Sound rating levels as low as 7.4 Bels.
- Scroll compressors found on the 4- and 5-ton sizes.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Commercial-grade base rails are factory-installed options. Standard on all 50 Hz voltages.
- Units are listed by UL and CUL, certified by ARI.
- Three-speed direct-drive indoor fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62.
- CE (European Community) models also available.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50SS-018	–	–	1.5	–	208	934	1109	613	36	44	24
50SS-024	6.9	6 9	2	126	258	934	1109	613	36	44	24
50SS-030	8.5	8.5	2.5	132	271	934	1109	613	36	44	24
50SS-036	10.6	10.6	3	144	297	934	1109	613	36	44	24
50SS-042	–	–	3.5	–	300	934	1109	714	36	44	28
50SS-048	13.8	13.8	4	165	343	934	1109	867	36	44	34
50SS-060	17.6	17.6	5	168	350	934	1109	867	36	44	34

NOTE: 60 Hz weights and dimensions do not include base rail.

Packaged and Split Systems

Single-Packaged Standard Efficiency Rooftop with Gas Heating/Electric Cooling

Model 48TJ

3-12.5 tons

- Standard efficiency levels of 10 SEER/9 EER.
- Units arrive fully assembled, charged, and ready to run with factory run-test printout provided.
- Cabinets are prepainted galvanized steel for structural integrity.
- Easily converted from vertical to horizontal airflow.
- Commercial-grade, roll-formed baserail design with forklift slots and rigging holes.
- Dimpled heat exchangers optimize heat transfer for improved efficiency.
- Dual-stage gas heat on all units maximize efficiency and customizes comfort.
- Integrated Gas Controller (IGC) provides built-in gas heat control and diagnostics.
- Thru-the-bottom service connection capability.
- Non-corrosive, sloped condensate drain pan.
- Standard 51 mm filters easily accessed without tools.
- Low sound levels (8.2-8.8 Bels).
- A wide assortment of factory- and field-installed options.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
48TJE004	–	–	3	227	500	1872	1143	846	74	45	33
48TJF004	–	–	3	227	500	1872	1143	846	74	45	33
48TJD005	–	–	4	231	510	1872	1143	846	74	45	33
48TJE005	–	–	4	231	510	1872	1143	846	74	45	33
48TJF005	–	–	4	231	510	1872	1143	846	74	45	33
48TJD006	–	–	5	240	530	1872	1143	846	74	45	33
48TJE006	–	–	5	240	530	1872	1143	846	74	45	33
48TJF006	–	–	5	240	530	1872	1143	846	74	45	33
48TJD007	–	–	6	274	605	1872	1143	846	74	45	33
48TJE007	–	–	6	274	605	1872	1143	846	74	45	33
48TJF007	–	–	6	274	605	1872	1143	846	74	45	33
48TJD008	22.9	22.9	7.5	422	930	2219	1467	1049	87	58	41
48TJE008	22.9	22.9	7.5	422	930	2219	1467	1049	87	58	41
48TJF008	22.9	22.9	7.5	422	930	2219	1467	1049	87	58	41
48TJD009	–	–	8.5	426	940	2219	1467	1049	87	58	41
48TJE009	–	–	8.5	426	940	2219	1467	1049	87	58	41
48TJF009	–	–	8.5	426	940	2219	1467	1049	87	58	41
48TJD012	29.2	29.2	10	497	1095	2219	1467	1253	87	58	49
48TJE012	29.2	29.2	10	497	1095	2219	1467	1253	87	58	49
48TJF012	29.2	29.2	10	497	1095	2219	1467	1253	87	58	49
48TJD014	35.9	35.9	12.5	503	1110	2219	1467	1253	87	58	49
48TJE014	35.9	35.9	12.5	503	1110	2219	1467	1253	87	58	49

Packaged and Split Systems

50TJ

Single-Packaged Standard Efficiency Rooftop with Electric Heating/Electric Cooling

Model 50TJ

3-12.5 tons

- Standard efficiency levels of 10 SEER/9 EER.
- Units arrive fully assembled, charged, and ready to run with factory run-test printout provided.
- Electric heaters available.
- Cabinets are prepainted galvanized steel for structural integrity.
- Easily converted from vertical to horizontal airflow.
- Commercial-grade, roll-formed baserail design with forklift slots and rigging holes.
- Thru-the-bottom service connection capability.
- Non-corrosive, sloped condensate drain pan.
- Standard 51 mm filters easily accessed without tools.
- Low sound levels (8.2-8.8 Bels).
- A wide assortment of factory- and field-installed options.
- CE (European Community) models also available.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50TJ-004	–	–	3	184	405	1872	1143	846	74	45	33
50TJ-005	–	–	4	188	415	1872	1143	846	74	45	33
50TJ-006	–	–	5	197	435	1872	1143	846	74	45	33
50TJ-007	19.0	–	6	231	510	1872	1143	846	74	45	33
50TJ-008	22.9	22.9	7.5	370	815	1872	1143	846	74	45	33
50TJ-009	25.0	25.0	8.5	372	820	1872	1143	846	74	45	33
50TJ-012	29.2	29.2	10	442	975	1872	1143	846	74	45	33
50TJ-014	35.9	35.9	12.5	449	930	1872	1143	846	74	45	33

Packaged and Split Systems

48TJ, 50TJ

Single-Packaged Standard Efficiency Rooftop with Gas Heating/Electric Cooling

Model 48TJ

15-25 tons

- Draw-through fan.
- Integrated economizer.
- Short cycle and pressure protection.
- Alumagard™ heat exchanger coating.
- Induced-draft fan.
- Turbo-Tubular™ heat exchangers.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
48TJD016	–	15	852	1834	2121	1707	1143	83.5	67.2	45
48TJE016	–	15	841	1854	2121	1707	1143	83.5	67.2	45
48TJD020	–	18	967	2131	2121	1707	1143	83.5	67.2	45
48TJD024	–	20	967	2131	2121	1707	1200	83.5	67.2	47.2
48TJE024	–	20	1094	2441	2623	1707	1238	103.2	67.2	48.2
48TJD028	–	25	1140	2514	2121	1707	1200	83.5	67.2	47.2
48TJE028	–	25	1267	1267	2623	1707	1238	103.2	67.2	48.2

Outdoor Packaged Cooling Units with Optional Electric Heat

Model 50TJ

15-25 tons (55 to 86.5 kW) cooling

Unitary self-contained cooling unit intended for outdoor installation with electric heat (accessory or FIOP). 50TJ units are normally used with bottom supply/return ductwork and are mounted on accessory roofcurbs on flat or shallow pitch rooftops.

- All ductwork is attached directly to the accessory roofcurb.
- 50TJ units are the most compact, lightweight Outdoor Packaged Units offered.
- Communicating DDC (Direct Digital Controls) are optional.
- Hinged access panels and enhanced service features are optional.
- 230, 460, 380V 60Hz and 400V 50Hz models are available.
- 50TJ016 models are capable of 52°C (125°F) operation with accessory unloader control.
- 50TJ024 models are fully capable of 52°C (125°F) operation.
- Effective May '97, 50TJ028 fully capable of 52°C (125°F) operation.

Model	Nominal Capacity 50/60Hz		Machine Weight		Heating Capacity	Dimensions					
						A	B	C	A	B	C
	kW	tons	kg	lbs		mm			in		
					Electric (kW)						
50TJ016	51.3/55.0	15/15	803	1770	0, 22, 37, 53	2318	2226	1181	91.25	87.63	46.50
50TJ024	68.4/70.0	20/20	877	1930	0, 22, 37, 53	2318	2226	1238	91.25	87.63	48.75
50TJ028	87.2/86.5	25/25	1095	2414	0, 22, 37, 53	2318	2226	1238	91.25	87.63	48.75

Packaged and Split Systems

50EJ

E Series
Outdoor Packaged Cooling Units with Optional Electric Heat

Models 50EJ, EW

20-45 tons (75 to 159 kW) cooling

Unitary self-contained cooling unit intended for outdoor installation with electric heat (accessory or FIOP). 50EJ units are used with bottom supply/return ductwork and are mounted on accessory roofcurbs on flat or shallow pitch rooftops. All 50EJ ductwork is attached directly to the accessory roofcurb. 50EW units are specifically designed to be used with side supply/return ductwork. Ductwork is attached directly to the 50EW unit.

- Communicating DDC (Direct Digital Controls) are standard.
- Hinged access panels and enhanced service features are standard.
- 230, 460, 380V 60Hz and 400V 50Hz models are available.
- 50EJ024, 028, 038, 044 60Hz models are capable of 52°C (125°F) operation.
- 50EJ044 50Hz model is capable of 52°C (125°F) operation.
- Effective May '97, 50EJ038 50Hz model capable of 52°C (125°F) operation.

Model	Nominal Capacity 50/60Hz		Machine Weight		Heating Capacity	Dimensions					
						A	B	C	A	B	C
	kW	tons	kg	lbs		mm			in		
					Electric (kW)						
50EJ/EW024	65.6/74.5	18.7/21.2	1715	3780	0, 36, 72	4193	2258	1857	165.08	88.90	73.11
50EJ/EW028	81.0/88.5	23.0/25.2	1753	3865	0, 36, 72	4193	2258	1857	165.08	88.90	73.11
50EJ/EW030	94.1/98.7	26.8/28.1	1753	3865	0, 36, 72	4193	2258	1857	165.08	88.90	73.11
50EJ/EW034	98.0/109.3	27.9/31.1	1753	3865	0, 36, 72	4193	2258	1857	165.08	88.90	73.11
50EJ/EW038	— /117.7	— /33.5	1880	4145	0, 36, 72	5471	2258	1857	215.40	88.90	73.11
50EJ/EW044	122.3/135.3	34.8/38.5	1982	4370	0, 36, 72	5471	2258	1857	215.40	88.90	73.11
50EJ/EW048	— /158.5	— /45.1	2109	4650	0, 36, 72	5471	2258	1857	215.40	88.90	73.11

50DJ/DW
50DK/DY
50NP/NB

Weathermaker III
Rooftop Single-Package Cooling

Models 50DJ/DW Constant Air Volume
Models 50DK/DY Variable Air Volume
Models 50NP/NB CCN CV/VAV

30-75 tons cooling

Expanded line of horizontal rooftop packaged units for constant or variable air volume.

- Highly efficient airflow path.
- Dual compressors, dual refrigerant circuits.
- Electric heat (including morning warmup on VAV).
- Downshot or horizontal duct connections.
- DK, DY units have self-diagnostic, electronic control.
- NP, NB units have integrated direct digital control for either CV or VAV applications.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
50DJ, DW, DK, NP 034	90	30	2133	4690	6321	2329	1794	249	92	71
5ODJ DW, DK, NP 044	120	40	2540	5590	7534	2329	1794	297	92	71
50DJ, DW, DK, NP 054	150	50	3583	7880	10092	2329	2106	397	92	83
50DJ, DW, DK, NP 064	180	60	3717	8180	10092	2329	2106	397	92	83
50DJ, DW, DK, NP 074	—	75	3912	8610	11001	2329	2106	433	92	83

48GJ

TIERRA™
Single-Packaged High Efficiency with Gas Heating/Electric Cooling Ozone-Friendly Rooftop

Model 48GJ

5, 7.5 and 10 tons – 60Hz only

- Chlorine-free R-407C refrigerant.
- Designed for improved environmental conditions with minimal threat to the ozone layer.
- Efficiencies up to 11.9 SEER and 10.0 EER.
- Gas heating with high, medium or low factory options.
- Industry-exclusive IGC solid-state control that provides full on-board diagnostics with flashing LED for error code designation, sophisticated induced draft fan and burner control logic (pilotless system) as well as an energy-saving indoor fan motor relay. Also provides industry-exclusive anti-cycle protection.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Units are listed by UL and CUL, certified by ARI.
- Single-scroll compressor in 5-ton unit and double-scroll compressors on 7.5- and 10-ton units.
- Filter access door with tool-less entry is standard.
- Standard belt-drive evaporator fan motors with adjustable pulleys.
- Standard high-static fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62 is standard. Provides horizontal or vertical center drain capability.
- Full-perimeter, heavy-gauge base rail is standard.
- Optional factory-installed Apollo Direct Digital communication control.
- Optional hinged access panels for control box, filter, evaporator fan motor and compressor for quick service access, with tool-less entry and panels that are permanently attached to the unit.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
48GJD006	–	–	5	281	620	1872	1143	846	74	45	33
48GJE006	–	–	5	281	620	1872	1143	846	74	45	33
48GJF006	–	–	5	286	630	1872	1143	846	74	45	33
48GJD008	–	–	7.5	454	1000	2219	1467	1049	87	58	41
48GJE008	–	–	7.5	454	1000	2219	1467	1049	87	58	41
48GJF008	–	–	7.5	454	1000	2219	1467	1049	87	58	41
48GJD012	–	–	10	533	1175	2219	1467	1253	87	58	49
48GJE012	–	–	10	533	1175	2219	1467	1253	87	58	49
48GJF012	–	–	10	544	1200	2219	1467	1253	87	58	49

Packaged and Split Systems

50GJ

TIERRA™
Single-Packaged High Efficiency with Electric Heating/Electric Cooling Ozone-Friendly Rooftop

Model 50GJ

5, 7.5 and 10 tons

- Chlorine-free R-407C refrigerant.
- Designed for improved environmental conditions with minimal threat to the ozone layer.
- Efficiencies up to 11.9 SEER and 10.0 EER.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Units are listed by UL and CUL, certified by ARI.
- Single-scroll compressor in 5-ton unit and double-scroll compressors from 7.5- and 10-ton units.
- Filter access door with tool-less entry is standard.
- Standard belt-drive evaporator fan motors with adjustable pulleys.
- Standard high-static fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62 is standard. Provides horizontal or vertical center drain capability.
- Full-perimeter heavy gauge base rail is standard.
- Optional factory-installed Apollo Direct Digital communication control.
- Optional hinged access panels for control box, filter, evaporator fan motor and compressor for quick service access, with tool-less entry and panels that are permanently attached to the unit.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50GJ-006	15.8	15.8	5	230	507	1872	1143	846	74	45	33
50GJ-008	22.9	22.9	7.5	417	920	2219	1467	1049	87	58	41
50GJ-012	29.2	29.2	10	456	1005	2219	1467	1253	87	58	49

48HJ

WEATHERMASTER™
Single-Packaged High Efficiency Rooftop with Gas Heating/Electric Cooling

Model 48HJ

3-12.5 tons

- Highest efficiency levels up to 13.0 SEER and 11.0 EER.
- Lowest sound rating levels.
- Gas heating with high, medium or low factory options.
- Industry-exclusive IGC solid-state control that provides full on-board diagnostics (with flashing LED) for error code designation, sophisticated induced draft fan and burner control logic (pilotless system) as well as an energy-saving indoor fan motor relay. Also provides industry-exclusive anti-cycle protection.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Units are listed by UL and CUL, certified by ARI.
- 50Hz CE unit is designed in accordance with European standard EN60335-2-40.
- Single-scroll compressors from 3-6 tons and double-scroll compressors from 7.5 – 12.5 tons.
- Standard filter access door with tool-less entry.
- Standard belt-drive evaporator fan motors with adjustable pulleys.
- Standard high-static fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62 is standard. Provides horizontal or vertical center drain capability.
- Full-perimeter, heavy-gauge base rail is standard.
- Optional factory-installed Apollo Direct Digital communication control.
- Optional factory-installed MoistureMiser for added de-humidification of up to 40%.
- Optional hinged access panels for control box, filter, evaporator fan motor and compressor for quick service access, with tool-less entry and panels that are permanently attached to the unit.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
48HJE004	–	–	3	259	572	1872	1143	846	74	45	33
48HJF004	–	–	3	259	572	1872	1143	846	74	45	33
48HJD005	–	–	4	264	582	1872	1143	846	74	45	33
48HJE005	–	–	4	273	602	1872	1143	846	74	45	33
48HJF005	–	–	4	277	610	1872	1143	846	74	45	33
48HJD006	–	–	5	281	620	1872	1143	846	74	45	33
48HJE006	–	–	5	281	620	1872	1143	846	74	45	33
48HJF006	–	–	5	286	630	1872	1143	846	74	45	33
48HJD007	–	–	6	298	657	1872	1143	846	74	45	33
48HJE007	–	–	6	298	657	1872	1143	846	74	45	33
48HJF007	–	–	6	301	664	1872	1143	846	74	45	33
48HJD008	22.9	22.9	7.5	454	1000	2219	1467	1049	87	58	41
48HJE008	22.9	22.9	7.5	454	1000	2219	1467	1049	87	58	41
48HJF008	22.9	22.9	7.5	454	1000	2219	1467	1049	87	58	41
48HJD009	–	–	8.5	458	1010	2219	1467	1049	87	58	41
48HJE009	–	–	8.5	458	1010	2219	1467	1049	87	58	41
48HJF009	–	–	8.5	458	1010	2219	1467	1049	87	58	41
48HJD012	29.2	29.2	10	533	1175	2219	1467	1253	87	58	49
48HJE012	29.2	29.2	10	533	1175	2219	1467	1253	87	58	49
48HJF012	29.2	29.2	10	544	1200	2219	1467	1253	87	58	49
48HJD014	35.9	35.9	12.5	551	1215	2219	1467	1253	87	58	49
48HJE014	35.9	35.9	12.5	551	1215	2219	1467	1253	87	58	49

Packaged and Split Systems

50HJ

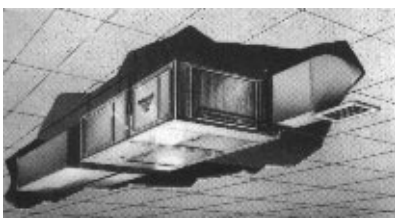
WEATHERMASTER™
Single-Packaged High Efficiency Rooftop with Electric Heating/Electric Cooling

Model 50HJ

3-12.5 tons

- Highest efficiency levels up to 13.0 SEER and 11.0 EER.
- Lowest sound rating levels.
- Electric heat available as field-installed accessory.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Units are listed by UL and CUL, certified by ARI.
- 5OHz CE unit is designed in accordance with European standard EN60335-2-40.
- Single-scroll compressors from 3-6 tons and double-scroll compressors from 7.5 – 12.5 tons.
- Filter access door with tool-less entry is standard.
- Standard belt-drive evaporator fan motors with adjustable pulleys.
- Standard high-static fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62 is standard. Provides horizontal or vertical center drain capability.
- Standard full-perimeter, heavy-gauge base rail.
- Optional factory-installed Apollo Direct Digital communication control.
- Optional factory-installed MoistureMiser for added de-humidification of up to 40%.
- Optional hinged access panels for control box, filter, evaporator fan motor and compressor for quick service access, with tool-less entry and panels that are permanently attached to the unit.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50HJ-004	–	–	3	216	477	1872	1143	846	74	45	33
50HJ-005	–	–	4	221	487	1872	1143	846	74	45	33
50HJ-006	15.8	–	5	230	507	1872	1143	846	74	45	33
50HJ-007	19	–	6	255	562	1872	1143	846	74	45	33
50HJ-008	22.9	22.9	7.5	417	920	2219	1467	1049	87	58	41
50HJ-009	25	25	8.5	420	925	2219	1467	1049	87	58	41
50HJ-012	29.2	29.2	10	456	1005	2219	1467	1253	87	58	49
50HJ-014	35.9	35.9	12.5	508	1120	2219	1467	1253	87	58	49



50AH

Indoor Single Packaged

Single-Packaged Horizontal Indoor ROOMTOP® with Electric Heating/Electric Cooling

Model 50AH

2-5 tons – 60Hz only

- Installs above suspended ceiling.
- Compact design can be installed as a split system.
- Ease of service/maintenance.
- Scroll compressors in all sizes.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50AH-024	–	–	2	272	600	1676	1245	457	66	49	18
50AH-036	–	–	3	281	620	1676	1245	457	66	49	18
50AH-048	–	–	4	317	700	1676	1245	610	66	49	24
50AH-060	–	–	5	322	710	1676	1245	610	66	49	24

Packaged and Split Systems

Software Systems

Carrier E20 - II

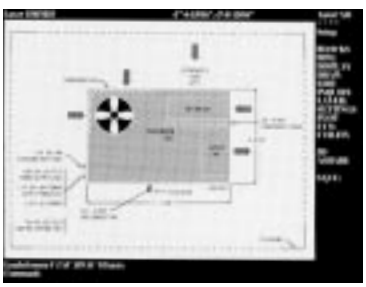
The E20-II family of programs helps HVAC designers save time by providing the tools for:

- Load Estimating
  From simplified input to ultra-sophistication, choose the method that best meets your need.
- Operating Cost Analysis
  Simulate your client's HVAC equipment operation using a temperature bin method or hour-by-hour analyses. Excellent tool for comparative evaluations.
- Economic Analysis
  Ideal for computing payback, cash flow, discounting, investment credit, savings-to-investment ratios, constant variable escalation, and comparative studies.
- Duct Design
  Design and select duct sizing using static regain or equal friction method. Reduces your time by an average of 50%.
- Add-on Modules (DuctLINK)
  Interface Duct Design to AutoCAD® or other DXF-compatible CAD systems for even better productivity increases.
- DX Piping Design
  Quick selection of pipe size, suction, hot gas and liquid lines. Calculates pressure drop and amount of subcooling required for a time savings of 95%.
- Water Piping Design
  Calculates the most economical pipe sizes, pressure drops, material requirements, and system flow rates for plastic, copper, or steel pipe in either open or closed systems.

Products and Systems Computerized Catalog

Allows engineers to quickly and effectively select products and systems offered by Carrier. The electronic catalog is ideal for "instant turnaround," continual input/output monitoring and modifications of the selected products.

- Ideal for performance evaluation of selected equipment.
- Instant turnaround.
- Allows user to continually monitor and modify input/output.
- Provides processing for special applications:
  - Brine Applications
  - Altitude.
- Includes product acoustic data and application analysis.
- Stores completed selections.
- Simple to use.
- Highly accurate.
- Uses ARI-approved methods.
- Reduces engineering expense.
- Provides detailed output.
- Permanent copy of results from printer both in input/output or submittal format.
- Multiple selection output.
- Runs in either English or S.I. metric units.
- Available for 50 and 60 Hz equipment.



Electronic Templates

We offer over 500 schematic, plan- and/or elevation-view drawings for Carrier commercial equipment. Already in DXF drawing format, they offer a speedy, accurate way to insert equipment schematics into engineering drawings—and help you specify and lay out equipment.

- ASCII-format instructional and index files are built-in and can be viewed with basic DOS commands. The index files list DXF drawings and their contents; instructional files tell you how to view, print, and utilize the drawings in AutoCAD®/ VersaCAD®, and other DXF-compatible CAD systems.
- Includes wide range of Carrier product drawings, including: chillers, rooftop packaged units, air-handling units, and much more.
- DXF drawings are drawn to scale, with appropriate clearances, attachments, and connections clearly shown.
- They are also organized by layer, so unwanted information can be easily turned off or deleted.

AutoCAD is a registered trademark of AutoCAD, Inc.
VersaCAD is a registered trademark of VersaCAD Corp., a subsidiary of the PRIME Computer Corp.

Split Systems—Cooling

38TUA

Air-Cooled Condensing Units

Model 38TUA

7-17.6 kW

Efficient air conditioning condensing units for residential and light commercial applications.

- Compressors with built-in protection against high current or temperature.
- Copper tube, aluminum fin coils.
- Coils, grille, and fan designed for extra-quiet operation.
- Environmentally friendly reusable service valves.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
38TUA024	7.0	2.0	145	65.8	706.4	571.5	698.5	27.8	22.5	27.5
38TUA036	10.6	3.0	230	104.3	706.4	762.0	887.4	27.8	30	34.9
38TUA048	14.1	4.0	250	113.8	858.8	762.0	887.4	33.8	30	34.9
38TUA060	17.6	5.0	303	137.4	1011.2	762.0	887.4	39.8	30	34.9

38TKB

High-Efficiency Air-Cooled Condensing Units

Models 38TKB, CKC, CKX

1.5-5 tons

- Durable copper tube/aluminum fin coil construction.
- High-efficiency compressors with built-in protective devices.
- Tough, baked-on powder paint finish ensures years of good looks and long life.
- Environmentally friendly reusable service valves.
- Totally enclosed fan motor to ensure reliability.
- Weather-Armor II cabinet.

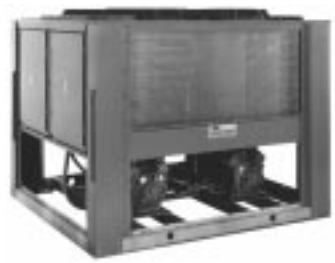
Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
38TKB018	—	1.5	63	143	584	711	559	28	23	22
38TKB024	—	2.0	64	153	584	711	559	28	23	22
38TKB030	—	2.5	72	163	584	711	813	28	23	32
38TKB036	—	3.0	68	164	584	711	813	28	23	32
38TKB042	—	3.5	105	237	762	889	813	35	30	32
38TKB048	—	4.0	109	241	762	889	813	35	30	32
38TKB060	—	5.0	116	258	762	889	813	35	30	32
38CKC018	5.3	1.5	55.3	122	457.2	658.8	457.2	18	25.9	18
38CKC024	7.0	2.0	59.4	131	571.5	557.2	571.5	22.5	21.9	22.5
38CKC036	10.6	3.0	67.1	148	571.5	760.4	571.5	22.5	29.9	22.5
38CKC048	14.1	4.0	94.8	209	762.0	709.6	762.0	30	27.9	30
38CKC060	17.6	5.0	99.8	220	762.0	1014.4	762.0	30	39.9	30
*38CKX024	7.0	—	59.4	131	571.5	557.2	560.4	22.5	21.9	22.1
*38CKX036	10.6	—	64.9	143	571.5	862.0	560.4	22.5	33.9	22.1
*38CKX048	14.1	—	98.6	217	762.0	709.6	750.9	30	27.9	29.6
*38CKX060	17.6	—	101.4	224	762.0	1014.4	750.9	30	39.9	29.6

*CE Marked Units
CE stands for “Communitée de Europe”

38CKC

Packaged and Split Systems

38AKS



38AH

Air-Cooled Condensing Units

Models 38AKS, AH

10-127 tons cooling

Air-cooled, high-efficiency condensing units for commercial and industrial applications with the initial cost advantages of a split system.

- Direct-drive condenser fan.
- Multifunction Time Guard circuit.
- Aluminum fin on copper tube coil for maximum heat transfer.
- High- and low-pressure switches and crankcase heaters to ensure safety and long-term reliability.
- Galvanized, painted construction for long life.
- 38AH models have two independent refrigerant circuits.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
38AKS013	30.4	10	332	732	1936	1118	1013	76	43	40
38AKS014	36.6	12.5	353	779	1936	1118	1013	76	43	40
38AKS016	45.7	15	358	789	1936	1118	1013	76	43	40
38AKS024	64.3	20	409	900	1936	1118	1013	76	44	40
38AKS028	82.8	25	748	1650	3247	1742	1315	128	69	52
38AKS034	94.5	30	818	1803	3247	1742	1315	128	69	52
38AKS044	127	40	1106	2437	4424	1742	1315	173	69	52
38AH024	63	20	798	1760	3247	1742	1315	128	69	52
38AH028	73	25	826	1820	3247	1742	1315	128	69	52
38AH034	87	30	853	1880	3247	1742	1315	128	69	52
38AH044	123	40	1480	3259	2520	2253	2013	100	89	79
38AH054	144	50	1501	3309	2520	2253	2013	100	89	79
38AH064	175	60	1617	3365	2520	2253	2013	100	89	79
38AH074	214	70	1729	3812	3131	2253	2219	123	89	87
38AH084	242	80	1840	4057	3131	2253	2219	123	89	87
38AH094	274	90	2308	5088	3413	2337	2428	133	92	96
38AH104	305	100	2465	5435	3413	2337	2428	133	92	96
38AH124	351	120	3294	7260	5650	2253	2013	222	89	79
38AH134	390	130	3406	7507	6253	2253	2219	246	89	87

38AK/AKS

Air-Cooled Condensing Units

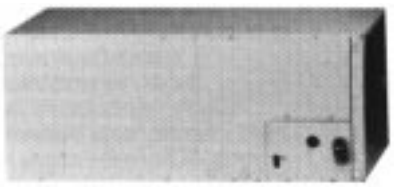
Models 38AK/AKS

6-10 tons

- High operating efficiency.
- Match 40RM Air Handling Units and 28CB, LA Direct Expansion Coils.
- 38AK utilizes hermetic compressor.
- 38AKS uses semi-hermetic compressor.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
38AK-007	19.0	N/A	6	177	390	991	1143	846	39	45	33
38AK-008	24.3	N/A	7.5	190	420	991	1143	1067	39	45	42
38AK-012	32.9	N/A	10	202	445	991	1143	1067	39	45	42
38AKS008	24.3	N/A	7.5	254	560	991	1143	1067	39	45	42
38AKS009	29.9	N/A	8.5	278	614	991	1143	1067	39	45	42
38AKS012	29.5	N/A	10	309	682	991	1143	1067	39	45	42

Packaged and Split Systems



FB4A

Heat Pump/Cooling Duty Fan Coil Units

Model FB4A–Standard Features
Model FC4B–Deluxe Features
Model FK4C–Premium Features

1.5-5 tons

Compact, high-efficiency, multipoise-designed air handlers with multiple feature levels for maximum flexibility.

FB4A:

- Multipoise design.
- Three-speed fan motors.
- High-density 1-in. (25 mm) insulation.
- High-efficiency grooved copper tubes with louvered fins.
- Modular construction (042, 048, 060).
- Check-Flo-Rater™ metering device.
- Prepainted cabinet.

FC4B Deluxe with TXV:

- Thermostatic expansion valve (TXV).
- Rifled copper tube/aluminum fin.
- Multipoise model.
- Field-convertible to downflow.
- Field-convertible to horizontal right.
- Three-speed motor (unit shipped on medium speed).
- Field-installed electric heat.
- Permanent filter.
- Solid-state control board with 5-amp fuse.
- Prepainted 20-gauge casing.
- Modular units available in 3.5, 4 & 5 tons.
- Thick, high-density, foil-faced insulation.

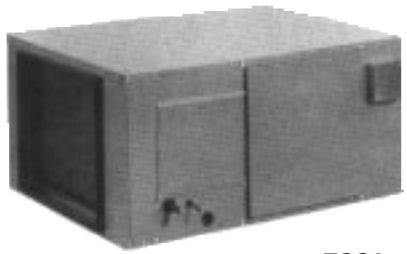
FK4C Variable Speed:

- High-efficiency, programmable multi-speed blower motor (ICM2).
- Easy-select board with 5-amp fuse.
- Thermostatic expansion valve (TXV).
- Rifled copper tube/aluminum fin.
- Multipoise model.
- Permanent framed filter/filter rack.
- Prepainted 20-gauge casing.
- Modular unit available in 006 size.
- Field-installed electric heat (3-30 kW, fused, 10kW and down).
- Choice of on/off TDR (time delay relay).
- Fully durable plastic condensate pans.
- Foil-faced, 1" thick, high-density insulation.

Model	Nominal Capacity		Shipping Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
FB4A*F018	6.4	1.5	–	95	364	560	1084	15	22	43
FB4A*F024	8.2	2.0	–	95	364	560	1084	15	22	43
FB4A*F030	10.2	2.5	–	100	448	560	1212	18	22	48
FB4A*F036	12.3	3.0	–	117	448	560	1260	18	22	50
FB4A*F042	14.1	3.5	–	179	536	560	1357	21	22	54
FB4A*F048	17.3	4.0	–	190	536	560	1357	21	22	54
FB4A*F060	17.6	5.0	–	200	536	560	1357	21	22	54
FB4A*B070	17.6	5.0	–	200	612	560	1503	25	22	59
FC4B*F024	–	2.0	–	–	364	560	1084	15	22	43
FC4B*F030	–	2.5	–	–	448	560	1212	18	22	48
FC4B*F036	–	3.0	–	–	448	560	1260	18	22	50
FC4B*F042	–	3.5	–	–	536	560	1346	21	22	53
FC4B*F048	–	4.0	–	–	536	560	1360	21	22	50
FC4B*F060	–	4.5	–	–	536	560	1346	21	22	53
FC4B*B070	–	5.0	–	–	612	560	1524	25	22	60
FK4C*F001	–	2.0	–	136	448	560	1212	18	22	48
FK4C*F002	–	2.5	–	157	448	560	1084	18	22	43
FK4C*F003	–	3.0	–	179	536	560	1357	21	22	54
FK4C*F005	–	3.5	–	206	560	560	1357	22	22	54
FK4C*B006	–	4.0	–	253	612	560	1524	25	22	60

*An "N" in the model number denotes 60Hz, and an "S" denotes 50Hz.

Packaged and Split Systems



FG3A

Horizontal Fan Coil

Model FG3A

2-5 tons

- Horizontal, low profile—install below or above ceiling.
- Belt-drive blowers with adjustable speed pulleys.
- Filter provided as standard.
- Four-row cooling coil.
- Accessories: Hot water heating coil, adjustable discharge plenum, return-air mixing box.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
FG3A024	378	800	65	143	940	686	457	37	27	18
FG3A036	566	1200	78	172	940	940	457	37	37	18
FG3A048	755	1600	93	204	991	965	559	39	38	22
FG3A060	944	2000	107	235	1067	1143	559	42	45	22

Outdoor Single-Packaged Units

50ZP

Single-Packaged Air Conditioners with Electric Heat

Model 50ZP

2-5 tons cooling

- Standard efficiency levels at 10.0 SEER.
- Small, compact, and easy to handle.
- Horizontal air discharge with curb or slab unit mounting.
- Corrosion-proof base pan made of composite material.
- Simple top cover service access.
- Hand holds for lifting unit built into base pan, making installation safe and easy.
- Louvered sheet metal outdoor coil guard standard.
- Units are listed by UL and CUL, certified by ARI.
- Three speed direct-drive indoor fan motors.
- Designed to use drop-in cartridge style electric heaters.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50ZP-024	–	–	2	105	222	1295	813	562	51	32	22
50ZP-030	–	–	2.5	109	236	1295	813	562	51	32	22
50ZP-036	–	–	3	121	250	1295	813	562	51	32	22
50ZP-042	–	–	3.5	134	297	1295	813	765	51	32	30
50ZP-048	–	–	4	141	310	1295	813	765	51	32	30
50ZP-060	–	–	5	155	350	1295	813	867	51	32	34

38YCC

Split Systems

Residential Air-Cooled Split-System Heat Pump

Model 38YCC

2-5 tons

- Low-pressure switch protection.
- Crankcase heater to ensure reliability.
- Internal compressor relief valve for safety.
- Solid-state defrost timer board for enhanced efficiency.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
38YCC024	7.0	2	65.9	145	571.5	862.0	571.5	22.5	33.9	22.5
38YCC036	10.6	3	100.9	222	762.0	1014.4	762.0	30	39.9	30
38YCC048	14.1	4	102	225	762.0	862.0	762.0	30	33.9	30
38YCC060	17.6	5	118.6	261	762.0	862.0	762.0	30	33.9	30

Air-Cooled Split-System Heat Pump

Model 38YCX

2-5 tons

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kg	lbs	mm			in		
*38YCX024	7.0	2	65.9	145	571.5	862.0	571.5	22.5	33.9	22.5
*38YCX036	10.6	3	100.9	222	762.0	1014.4	762.0	30	39.9	30
*38YCX048	14.1	4	102	225	762.0	1014.4	762.0	30	39.9	30
*38YCX060	17.6	5	118.6	261	762.0	1014.4	762.0	30	39.9	30

*CE Marked Units
CE stands for “Communitée de Europe”

Heat Pumps

38AQS

Split-System Heat Pumps

Models 38AQS/40RMQ

7.5-15 tons cooling or heating

- Excellent fuel/energy savings for year-round heating and cooling.
- Defrost cycle, both time and temperature.
- Safe operation at low ambient temperature.
- Accumulator prevents refrigerant floodback, protects compressor.
- Time guard prevents rapid on/off compressor cycling.

Model	Nominal Capacity				Machine Weight		Dimensions					
	Heating		Cooling				A	B	C	A	B	C
	50Hz kW	60Hz tons	50Hz kW	60Hz tons	kg	lbs	mm			in		
38AQS008	26.0	7.5	26.0	7.5	286	630	991	1143	1067	39	45	42
38AQS012	†	†	†	†	340	750	1936	1118	1013	76	44	40
38AQS016	†	†	†	†	364	803	1936	1118	1013	76	44	40

† See table below

Systems

Outdoor Unit 38AQS	Indoor Unit 40RMQ*	Nominal Capacity Air Volume		Cooling		Heating	
		L/s	cfm	50Hz kW	60Hz tons	50Hz kW	60Hz tons
012	012	1890	4000	32	9	29	9
016	016	2830	6000	46	14	41	14

* See 40RMQ for fan coil dimensions.

Remote Air-Cooled Condensers

Models O9DE, DK

18.4-116.3 tons cooling

For use with reciprocation liquid chilling packages, built-up compressor units and air handling equipment.

- Greater system capacity and liquid lift.
- Uses direct-drive fans.
- Multi-circuit capability with different refrigerant in each cooling circuit (20 tons and above).
- Integral subcooling circuits.

Model	Nominal Capacity		Machine Weight		Dimensions					
	50Hz kW	60Hz tons	kg	lbs	A	B	C	A	B	C
					mm			in		
09DE016	53	18.4	211	465	1886	1003	1013	76	40	40
09DK020	N.A.	21.9	N.A.	762	N.A.	N.A.	N.A.	107	45	52
09DK024	70	25.9	362	762	2714	1131	1315	107	45	52
09DK028	88	33.3	446	944	2714	1742	1315	107	69	52
09DK034	106	48	678	1438	3893	1742	1315	154	69	52
09DK044	141	56.2	760	1589	3893	1742	1315	154	69	52
09DK054	176	65.8	769	1695	2528	2253	2013	100	89	79
09DK064	211	78.6	837	1771	2528	2253	2013	100	89	79
09DK074	246	95.4	998	2106	3131	2253	2219	123	89	87
09DK084	281	103.5	1098	2310	3131	2253	2219	123	89	87
09DK094	316	116.3	1293	2714	3413	2337	2337	134	92	92

Outdoor Single-Packaged Units

50ZH

Single-Packaged Heat Pump with Electric Heat

Model 50ZH

2-5 tons cooling

- Standard efficiency levels at 10.0 SEER.
- Small, compact, and easy to handle.
- Horizontal air discharge with curb or slab unit mounting.
- Corrosion-proof base pan made of composite material.
- Simple top cover service access.
- Hand holds for lifting unit built into base pan, making installation safe and easy.
- Louvered sheet metal outdoor coil guard standard.
- Units are listed by UL and CUL, certified by ARI.
- Three-speed direct-drive indoor fan motors.
- Designed to use drop-in cartridge style electric heaters.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50ZH-024	–	–	2	105	232	1295	813	562	51	32	22
50ZH-030	–	–	2.5	115	254	1295	813	562	51	32	22
50ZH-036	–	–	3	126	277	1295	813	765	51	32	30
50ZH-042	–	–	3.5	134	295	1295	813	765	51	32	30
50ZH-048	–	–	4	150	328	1295	813	765	51	32	30
50ZH-060	–	–	5	167	368	1295	813	890	51	32	35

50HS

Single-Packaged Standard Efficiency Heat Pump

Model 50HS

1.5-5 tons

- Standard efficiency levels at 10.0 SEER.
- Sound rating levels as low as 7.8 Bels.
- Heating efficiencies up to 3.2 COP and 7.0 HSPF.
- Use of Chronotemp Defrost Board to minimize defrost cycles and maximize unit efficiency.
- Scroll compressors on 4- and 5-ton sizes.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Commercial-grade base rails are factory-installed options (60Hz). Standard on all 50Hz voltages.
- Units are listed by UL and CUL, certified by ARI.
- Three-speed direct-drive indoor fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62.
- CE (European Community) models also available.

Model	Nominal Cooling Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50HS-018	–	–	1.5	–	300	–	–	–	36	44	24
50HS-024	7.15	7.15	2	128	308	934	1109	613	36	44	24
50HS-030	8.5	8.5	2.5	136	320	934	1109	613	36	44	24
50HS-036	10.2	10.2	3	147	340	934	1109	714	36	44	28
50HS-042	–	–	3.5	–	347	–	–	–	36	44	28
50HS-048	13.6	13.6	4	165	411	934	1109	867	36	44	34
50HS-060	17.1	17.1	5	168	425	934	1109	867	36	44	34

NOTE: Weights and dimensions do not include base rail.

Heat Pumps

50TJQ

Single-Packaged Standard Efficiency Rooftop Heat Pump

Model 50TJQ

3-10 tons

- Standard efficiency levels of 10 SEER/9 EER.
- Units arrive fully assembled, charged, and ready to run with factory run-test printout provided.
- Electric heaters available.
- Cabinets are prepainted galvanized steel for structural integrity.
- Easily converted from vertical to horizontal airflow.
- Commercial-grade, roll-formed baserail design with forklift slots and rigging holes.
- Thru-the-bottom service connection capability.
- Non-corrosive, sloped condensate drain pan.
- Standard 51 mm filters easily accessed without tools.
- Low sound levels (8.0-8.6 Bels).
- A wide assortment of factory- and field-installed options.
- CE (European Community) models also available.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50TJQ004	–	–	3	245	540	1872	1143	846	74	45	33
50TJQ005	–	–	4	268	590	1872	1143	846	74	45	33
50TJQ006	–	–	5	286	630	1872	1143	846	74	45	33
50TJQ007	–	–	6	295	650	1872	1143	846	74	45	33
50TJQ008	22.9	22.9	7.5	422	930	1872	1143	846	74	45	33
50TJQ009	22.9	22.9	8.5	424	935	1872	1143	846	74	45	33
50TJQ012	22.9	22.9	10	481	1060	1872	1143	846	74	45	33

50HJQ

Single-Packaged Heat Pump High-Efficiency Rooftop

Model 50HJQ

3-10 tons – 60Hz only

- Highest efficiency levels up to 12.0 SEER and 10.75 EER.
- Lowest sound rating levels.
- Electric heat available as field-installed accessory.
- Vertical or horizontal air discharge with curb or slab unit mounting.
- Units are listed by UL and CUL, certified by ARI.
- Single-scroll compressors from 3-6 tons and double-scroll compressors from 7.5 to 10 tons.
- Filter access door with tool-less entry standard.
- Standard belt-drive evaporator fan motors with adjustable pulleys.
- Standard high-static fan motors.
- Non-corrosive, sloped condensate pan in accordance with ASHRAE 62 is standard. Provides horizontal or vertical center drain capability.
- Full-perimeter heavy-gauge base rail is standard. Optional factory-installed Apollo Direct Digital communication control.
- Optional “Durablade” economizer with on-board battery pack that allows automatic closure of economizer with power failure to unit.
- Optional “Parablade” economizer (60Hz) with built-in spring return for closure of economizer with power failure to unit. Standard enthalpy controls and 45% barometric relief.
- Optional hinged access panels for control box, filter, evaporator fan motor and compressor, for quick service access with tool-less entry and panels that are permanently attached to the unit.

Model	Nominal Capacity			Machine Weight		Dimensions					
	50Hz	50Hz CE	60Hz			A	B	C	A	B	C
	kW	kW	tons	kg	lbs	mm			in		
50HJQ004	–	–	3	227	500	1872	1143	846	74	45	33
50HJQ005	–	–	4	231	510	1872	1143	846	74	45	33
50HJQ006	–	–	5	240	530	1872	1143	846	74	45	33
50HJQ007	–	–	6	265	585	1872	1143	846	74	45	33
50HJQ008	–	–	7.5	454	1000	2219	1467	1049	87	58	41
50HJQ012	–	–	10	492	1085	2219	1467	1253	87	58	49

Heat Pumps

50HJQ

Single-Packaged Rooftop Heat Pump

Models 50HJQ

13 & 15 tons

- Chronotemp™ defrost control system.
- Serviceable semi-hermetic compressors.
- Service valves and full refrigeration system safeties.
- High-static oversized fan motors (standard).
- Variable-pitch belt-drive fan motors (standard).
- TEMP system-compatible Apollo electronic controls (optional).

Model	Nominal Capacity				Machine Weight		Dimensions					
	Heating		Cooling									
	50Hz	60Hz	50Hz	60Hz			A	B	C	A	B	C
	kW	tons	kW	tons	kg	lbs	mm			in		
50HJQ014	33.3	12.5	35	12.5	859	1895	2121	1707	1143	83.5	67.2	45
50HJQ016	40	15	42	15	1000	2205	2121	1707	1143	83.5	67.2	45

Metric Conversion Chart

METRIC TECH	X	=	ENGLISH UNIT	X	=	SI UNIT
AREA						
cm^2				100		mm^2
cm^2	0.1550		in^2	645.2		mm^2
m^2				1.0		m^2
m^2	10.76		ft^2	0.09290		m^2
LENGTH						
µm				1.0		µm
µm	39.37		micro-inch	0.0254		µm
mm				1.0		mm
mm	0.03937		in	25.4		mm
mm	0.003281		ft	304.8		mm
m				1.0		m
m	3.281		ft	0.3048		m
m	1.094		yd	0.9144		m
MASS						
g				1.0		g
g	0.03527		oz	28.35		g
kg				1.0		kg
kg	2.205		Ib	0.4536		kg
tonne, Mg				1.0		tonne, Mg
tonne, Mg	1.102		U.S. ton (2000 Ib)	0.9072		tonne, Mg
POWER						
kcal/h				1.163		W
kcal/h	3.968		Btu/h	0.2931		W
HP metric				0.7355		kW
HP metric	0.9863		HP (500 $\frac{ft \cdot lb}{s}$)	0.7457		kW
Mcal/h				1.163		kW
Mcal/h	0.3307		Ton refr.	3.517		kW
PRESSURE						
mm w.g. 4°C				9.806		Pa
mm w.g. 4°C	0.03937		in. H_2O 39.2°F	249.1		Pa
mm Hg 0°C				0.1333		kPa
mm Hg 0°C	0.03937		in. Hg 32°F	3.386		kPa
kg/cm^2				98.07		kPa
kg/cm^2	14.22		psi	6.895		kPa
mH_2O	3.281		ft H_2O	2.989		kPa

METRIC TECH	X	=	ENGLISH UNIT	X	=	SI UNIT
TEMP. INTERVAL						
°C				1.0		K
°C	1.8		°F	0.5556		°C
VELOCITY						
m/s				1.0		m/s
m/s	3.281		ft/s	0.3048		m/s
m/s	196.9		ft/min	0.00508		m/s
VOLUME						
mm^3				$1.0x10^{-6}$		L
mm^3	$6.102x10^{-5}$		in^3	0.01639		L
L				1.0		L
L	0.03531		ft^3	28.32		L
mm^3				1.0		m^3
mm^3	1.308		yd^3	0.7646		m^3
L	0.2642		U.S. gal	3.785		L
L	2.113		U.S. pint	0.4732		L
mL, cm^3				1.0		mL
mL, cm^3	0.03381		U.S. oz	29.57		mL
VOLUME/TIME						
m^3/h				0.2778		L/s
m^3/h	0.5886		ft^3/min	0.4719		L/s
m^3/h	4.403		U.S. gal/min	0.06309		L/s
L/h				2.778x105		L/s
L/h	4.403x103		U.S. gal/min	0.06309		L/s
(m^3/h)/ (1000 kcal/h)	1.780		cfm/ton	0.1342		L/s•kW

METRIC TECH	CONVERSION FACTOR	ENGLISH UNIT	CONVERSION FACTOR	SI UNIT
TEMP.				
°C			°C+273.15	K
°C	(°Cx1.8)+32	°F	(°F-32) ÷ 1.8	°C

LEGEND

PREFIXES

M	MEGA	10^6
k	KILO	10^3
d	DECI	10^{-1}
c	CENTI	10^{-2}
m	MILLI	10^{-3}
µ	MICRO	10^{-6}

MEASURE

m	METER
cal	CALORIE
kg	KILOGRAM (mass)
kgf	KILOGRAM—FORCE
kp	KILOGRAM—FORCE
L	LITER
°C	DEGREES CELSIUS
K	KELVIN
W	WATT
Pa	PASCAL
J	JOULE
N	NEWTON
h	HOUR

UNIT

cP	CENTIPOISE
cSt	CENTISTOKE
HP metric =	(PS, CV, ch) METRIC HORSEPOWER
mm w.g.	MILLIMETERS WATER GAUGE
mm CE	MILLIMETERS WATER GAUGE
mm Hg	MILLIMETERS MERCURY
tonne =	1000 kg
kcal =	KILOCALORIE
bar=	100 kPa

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